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ABSTRACT

This manual is intended for use by district officials undertaking analysis of the costs of year-round school (YRS) programs. To analyze the budgetary impact of YRS, it is necessary to determine the actual costs incurred with the YRS program and to compare these costs to expenses that would be incurred without the YRS program. A simulated traditional-calendar school (TCS) program was created to permit direct comparisons of costs for providing the same services to the same student population under the two calendars. Three major types of costs are included in this analysis--capital costs avoided by YRS, operating costs, and transition costs. The basic process for performing this cost analysis can be summarized as follows: (1) Determine the number of additional schools or classrooms needed under an expanded TCS program. (2) Estimate the costs of providing these additional schools or classrooms. (3) Determine the operating costs directly attributable to the YRS program. (4) Estimate the expense of operating the additional schools and classrooms required under expanded TCS. (5) Determine the actual costs of the transition to the YRS calendar. (6) Compare the annual costs avoided under YRS with the annual costs incurred because of YRS. (Author/IRT)

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SRI International

A STUDY OF YEAR-ROUND SCHOOLS

Volume III: Handbook for Conducting Cost Analysis of Year-Round School Programs

November 1978

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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1 INTRODUCTION

Most school districts that have adopted year-round school (YRS) programs are interested in determining the impact on the district budget of changing the school calendar from 9 to 12 months. In many cases, the year-round schedule has been adopted at least in part because it represents more efficient use of current school facilities and avoids the cost of constructing new schools or classrooms to accommodate increasing enrollments. Even in districts where potential cost economies are not the primary impetus for the change in the school calendar, district officials and taxpayers alike should be interested in determining whether the YRS program has saved money and, if so, how much.

This manual is intended for use by district officials undertaking analysis of the costs of YRS programs operating in one or more schools. The manual uses the cost analysis model developed for SRI's evaluation of the year-round school program in the Pajaro Valley Unified School District of California.* We have used this model to analyze cost impacts in several California districts; however, the model can also be applied to districts outside California.

To analyze the budgetary impact of YRS, it is necessary to determine actual costs incurred by the district with the YRS program and compare these costs to expenses that would be incurred without the YRS program. Costs with YRS are based on actual expenditures identified in district budgets and financial reports. Costs without YRS are estimated for a district-wide 9-month school year program.

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*If this model is used retrospectively (as it was in the case of the PVUSD cost study), the derived costs represent differences between actual costs incurred under a year-round schedule and simulated costs under a traditional calendar. If the same model is used to project costs (and savings) associated with a shift from the traditional to the year-round calendar, the derived costs would represent differences between anticipated costs under the two schedules.

The simulated traditional-calendar school (TCS) program created for this cost analysis permits direct comparisons of costs for providing the same services to the same student population under the two calendars. The requirement that we compare costs for providing the "same services" under the two calendars implies, for example, that student-teacher ratios are the same and that use of double sessions does not increase in the TCS simulation. Since year-round calendars increase the number of students who can be served by existing facilities, one consequence of this requirement is the identification of some number of students who could not be served by the classrooms currently available and the staff currently employed if the district reverted to a traditional calendar. Our model specifies procedures for determining the number of new schools/classrooms and staff needed under an "expanded" TCS program, and procedures for estimating the costs of these additional resources.

Three major types of costs are included in this analysis:

- Capital costs "avoided" by YRS--the estimated cost for acquiring the additional schools or classrooms needed under the expanded TCS program.
- Operating costs--the recurring expense of staff salaries, benefits, materials, equipment, maintenance, transportation, and so forth.
- Transition costs--the expense of converting to a YRS program in one or more schools.

In the remaining chapters we describe in detail the procedures for carrying out the cost analysis. We provide a series of forms for use in collecting information on actual costs from district records and for generating the estimated costs under the simulated (expanded) TCS program. The basic process for performing this cost analysis can be summarized as follows:

(1) Determine the number of additional schools or classrooms needed under an expanded traditional-calendar program.

(2) Estimate the costs of providing these additional schools or classrooms.

(3) Determine the operating costs directly attributable to the year-round program.

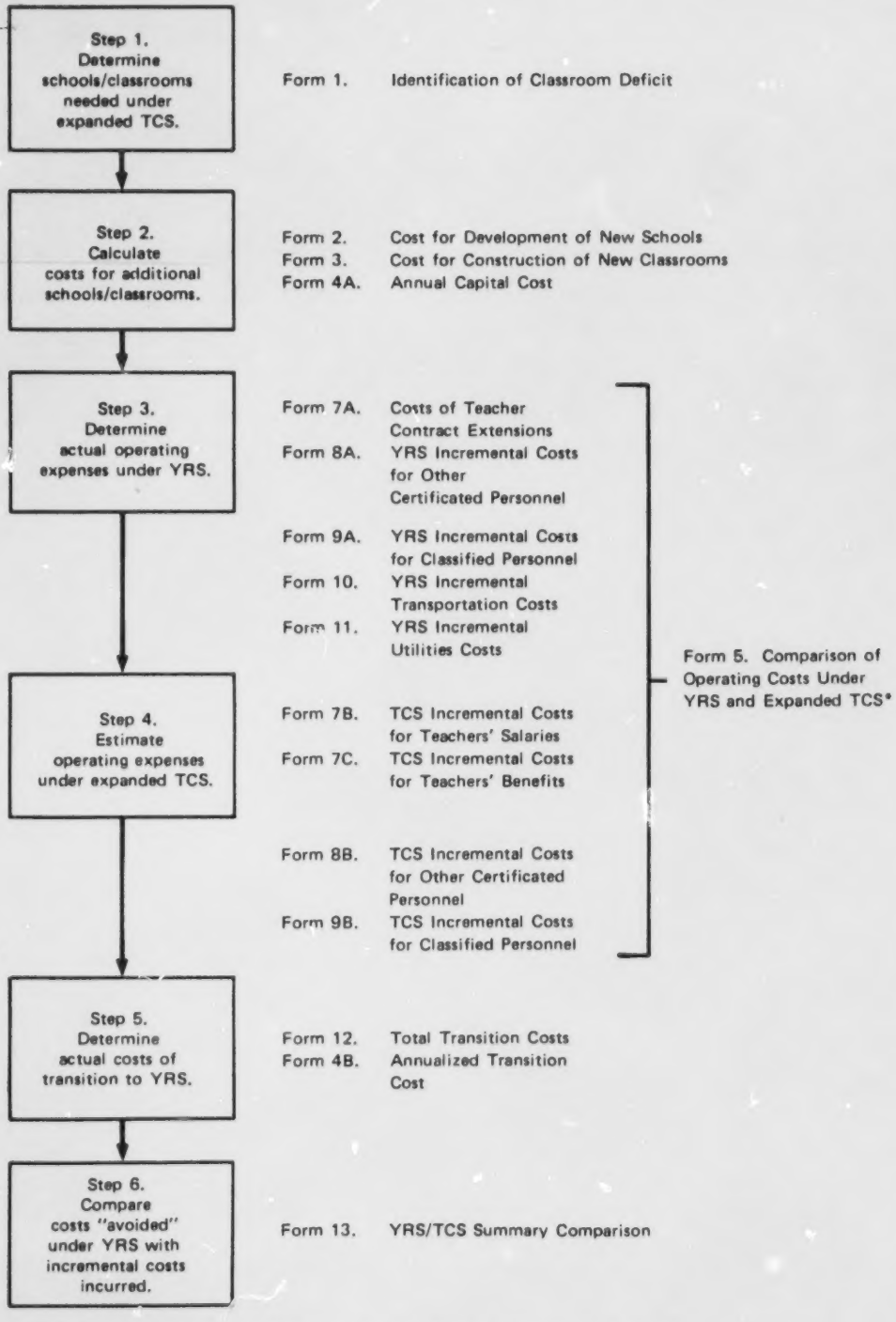
(4) Estimate the expense of operating the additional schools and classrooms required under expanded TCS.

(5) Determine the actual costs for the transition to the year-round calendar.

(6) Compare the annual costs "avoided" under YRS with the annual costs incurred because of YRS. If costs avoided exceed costs incurred, YRS represents a savings to the district.

The steps of this process, and the associated forms used in this study, are identified in Figure 1-1. In Chapter 2 we discuss capital costs (Steps 1 and 2 above). In Chapter 3 we focus on operating costs under the two schedules (Steps 3 and 4 above). In Chapter 4 we examine transition costs (Step 5). Finally, in Chapter 5 we show how to combine annual cost figures in each category to determine the overall impact of the YRS program on the district's annual budget.*

*Appendix A contains an abbreviated cost analysis procedure.


Step 1. Determine schools/classrooms needed under expanded TCS.
Form 1. Identification of Classroom Deficit
Step 2. Calculate costs for additional schools/classrooms.
Form 2. Cost for Development of New Schools
Form 3. Cost for Construction of New Classrooms
Form 4A. Annual Capital Cost
Step 3. Determine actual operating expenses under YRS.
Form 7A. Costs of Teacher Contract Extensions
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Form 9B. TCS Incremental Costs for Classified Personnel
Form 5. Comparison of Operating Costs Under YRS and Expanded TCS*
Step 5. Determine actual costs of transition to YRS.
Form 12. Total Transition Costs
Form 4B. Annualized Transition Cost
Step 6. Compare costs "avoided" under YRS with incremental costs incurred.
Form 13. YRS/TCS Summary Comparison

*Note: Forms 6A–6E are worksheets used for calculations in support of Form 5.

FIGURE 1-1 SUMMARY OF THE SRI COST ANALYSIS MODEL

2 CAPITAL COSTS

Most school districts consider converting to a year-round schedule as a way of serving an expanding enrollment without building new schools or adding new classrooms to existing school plants. The outlay necessary to provide school buildings and related equipment and funding is termed a capital cost.

In this chapter we describe a procedure that can be used to calculate the capital costs avoided under the year-round schedule. Districts currently operating under a traditional calendar can use this procedure to determine the estimated savings in annual capital costs that would be realized if they converted existing facilities to year-round use. Districts currently using a year-round calendar can use the procedure to determine the capital costs they would have incurred under the traditional, 9-month calendar.

The procedure used to calculate annual capital costs involves the following steps and forms:

(1) Determine the number of students who would not be (or who are not) adequately housed in existing facilities under a traditional schedule, and calculate the number of classrooms needed to house these students (Form 1, District Worksheet for Classroom Deficit).

(2) On the basis of the number and grade levels of classrooms needed, determine whether construction of one or more new schools is necessary (or, alternatively, whether new classrooms would be added to existing schools) to provide adequate facilities.

(3) If one or more new schools are needed, determine their size and development costs, including construction and purchase of land (Form 2, District Worksheet for Development of New Schools). If classrooms can be added to existing schools, determine their construction cost (Form 3, District Worksheet for Construction of New Classrooms).

(4) Using current bond interest rates, determine the annual capital cost to the district associated with the additional schools or classrooms (Form 4A, District Worksheet for Calculation of Annual Capital Cost).

In the remainder of this chapter we describe the procedures involved in completing Forms 1-4A.

Determining the Number of Classrooms Needed

Form 1 (District Worksheet for Classroom Deficit), shown in Figure 2-1, is used to determine the district's "classroom deficit"--that is, the number of new classrooms that would be needed to house all students under a traditional calendar, without changing the student-teacher ratio and without using double sessions. Because a classroom deficit at one school may be relieved by a surplus in another school, Form 1 should be completed for each school in the district, as follows:

FORM 1 DISTRICT WORKSHEET FOR CLASSROOM DEFICIT

YRS Classroom Use	School 1						School 2						School 3						School 4						Total					
	K	1-6	7-8	9-12	Special	Total	K	1-6	7-8	9-12	Special	Total	K	1-6	7-8	9-12	Special	Total	K	1-6	7-8	9-12	Special	Total	K	1-6	7-8	9-12	Special	Total
(1) Available Classrooms																														
(2) In Use Single Session																														
(3) In Use Double Session (× 2)*																														
(4) Surplus Classrooms																														
YRS Surplus Use																														
(5) Compensatory Education																														
(6) Vocational Education																														
(7) Migrant																														
(8) Bilingual																														
(9) Library																														
(10) Other																														
TCS Surplus Use																														
(11) Available Classrooms																														
(12) Same Surplus Use--TCS																														
(13) Net Available--TCS																														
TCS Classroom Use																														
(14) Enrollment Served																														
(15) Staffing Ratio																														
(16) Classrooms Needed																														
(17) Net Available--TCS																														
(18) Classroom Deficit																														

*Other than conventional double-session Kindergarten.

FIGURE 2-1 FORM 1

(1) For each grade group (i.e., Kindergarten, 1-6, 7-8, 9-12, Special Education*), enter the number of classrooms available at each school on Line 1. This includes all school rooms originally intended for use as classrooms and still legally usable as classrooms. For example, a room originally designed as a classroom but now used as a teachers' lounge would be counted as available (provided it can still legally be used as a classroom).

(2) Determine the number of classrooms allocated for each grade group under the year-round calendar. Enter the number of single-session classrooms on Line 2. If any rooms are used for double sessions, multiply the number of rooms by 2 and enter the result on Line 3.†

(3) Subtract Line 2 (single-session classes) and Line 3 (double-session classes) from Line 1 (available classrooms) to derive the number of surplus classrooms. Enter this number on Line 4.

YRS Classroom Use	K	1-6	7-8	9-12	Special	Total
(1) Available Classrooms	1	15				16
(2) In Use Single Session	1	13				14
(3) In Use Double Session (× 2)*	0	0				0
(4) Surplus Classrooms	0	2				2

*Students are classified in this category if they are required by law to be housed in special classrooms--classrooms where they receive all or a majority of their basic instruction. Thus, in California, Title I eligible children are not special education students because they are not required by law to be housed in special classrooms for basic instruction (even though these students may be pulled out of their home room class and sent to another class to receive special services).

†In some states, double-session Kindergartens are conventional. If this is the case, do not multiply the double-session Kindergarten classes by 2.

(4) Determine how each of the surplus classrooms shown on Line 4 is being used under the year-round schedule (or how each room would be used under YRS if the school is currently on a traditional schedule). Several common uses are listed on Lines 5-9; enter the number of classes used for each purpose on the corresponding line. Classrooms used for other purposes should be counted on Line 10. For example, if two classrooms that could serve grades 1-6 are used as a library/learning center, enter a 2 on Line 9.

YRS Surplus Use	K	1-6	7-8	9-12	Special	Total
(5) Compensatory Education		0				0
(6) Vocational Education		0				0
(7) Migrant		0				0
(8) Bilingual		0				0
(9) Library		2				2
(10) Other		0				0

(5) Enter the number of available classrooms on Line 11 (this is the same number that appears on Line 1).

(6) Determine the number of surplus classrooms that would continue to be used for the same purpose under a traditional calendar. Enter this number on Line 12. (Note: If the school is currently operating under YRS, this number is an estimate of classrooms that would continue to be used as libraries, etc., if the school reverted to a traditional schedule. If the school is currently operating under TCS, this number is based on an estimate of how classrooms would be used if the school remained on the traditional schedule.)

(7) Subtract Line 12 from Line 11 to determine the net available classrooms under the traditional calendar. (This is the number of rooms that would be used as classrooms under the traditional schedule.) Enter this number on Line 13.

TCS Surplus Use	K	1-6	7-8	9-12	Special	Total
(11) Available Classrooms	1	15				16
(12) Same Surplus Use--TCS	0	2				2
(13) Net Available--TCS	1	13				14

(8) Determine the school enrollment for each grade group. There are several enrollment measures that can be used, including:

- The planning enrollment figure (i.e., the figure used to determine the number of teachers required).
- The enrollment figure reported to the state (for example, on Form R-30 in California).
- The average daily attendance figure reported to the state (on Form J-41 in California).
- Maximum attendance.
- Yearly average attendance.

Which measure is most appropriate depends on the situation of the decision maker. In most cases, the planning enrollment figure is used. Enter the enrollment figures on Line 14.

(9) Enter the staffing ratio (number of students per teacher) applicable to each grade group on Line 15.*

TCS Classroom Use	K	1-6	7-8	9-12	Special	Total
(14) Enrollment Served	80	468				548
(15) Staffing Ratio	55	29				--
(16) Classrooms Needed	2	16				18
(17) Net Available--TCS	1	13				14
(18) Classroom Deficit	1	3				4

*In California, the maximum number of students allowed per teacher is given in Regulations: State Allocation Board [1810.4(g)] as:

Kindergarten, double session . . .	55
Kindergarten, single session . . .	27
Grades 1 through 3	29
Grades 4 through 6	33
Grades 7 through 12	30

(10) Divide Line 14 (enrollment) by Line 15 (staffing ratio) to determine the number of classrooms needed.* Enter the number of classrooms on Line 16.

(11) Enter the figure from Line 13 (net available classrooms) on Line 17.

(12) Subtract Line 17 (net available) from Line 16 (classrooms needed under TCS) to obtain the classroom deficit. Enter the result on Line 18. This deficit represents the number of additional classrooms needed to house all students in single-session classes under a traditional calendar.

(13) Repeat Steps 1-12 for each school in the district. Add the results from each Line 18 to determine the overall classroom deficit for the district.

TCS Classroom Use	K	1-6	7-8	9-12	Special	Total
(14) Enrollment Served	80	468				548
(15) Staffing Ratio	55	29				--
(16) Classrooms Needed	2	16				18
(17) Net Available--TCS	1	13				14
(18) Classroom Deficit	1	3				4

*This operation is likely to result in a non-integer quotient. (In the example, the quotients are 1.45 and 16.14 for Kindergarten and Grades 1-6, respectively. These figures have been rounded to 2 and 16.) We recommend the following rounding procedure: If the fractional component is .5 or more, add 1 to the integer component. (For double-session Kindergartens, add 1 if the fractional component is .25 or more.) A rounding procedure is required because the number of classrooms must be a whole number; a fractional classroom is a meaningless concept in terms of facilities.

Determining Whether New Schools Are Needed

If the calculations performed in Form 1 indicate that more classrooms are needed for TCS than are available in the district (that is, if Form 1 shows that there is an overall classroom deficit for one or more grade groups), then it is necessary to determine the costs that would be incurred in obtaining the additional facilities needed. Two courses of action are possible: (1) construction of one or more new schools, and (2) addition of new classrooms to existing facilities. Which course is more appropriate depends on district-specific considerations, such as:

- Whether the size of the classroom deficit justifies building a new school.
- Whether the deficit is spread across all grade levels or concentrated in one or more grade groups.
- Whether suitable land is available.
- How transportation costs will respond to the introduction of a new school.

In California, any new school intended for fewer than 300 students is considered a small school whose construction requires special approvals. Therefore, in our model a district classroom deficit must reach 10 or more classrooms before the construction of a new school is assumed appropriate. However, different states (and districts) have different attendance thresholds for school justification; the model must be modified to accommodate the actual threshold if it differs from 10.

Determining the Cost of Developing New Schools

If construction of one or more new schools is necessary to accommodate the student population under a traditional calendar, the simplest way to estimate the cost is to equate the cost of the school(s) to be constructed with the replacement cost of existing schools (obtainable, for example, from insurance appraisals).

An alternative procedure for determining the cost of building one or more new schools uses Form 2 (District Worksheet for Development of New Schools), shown in Figure 2-2. This form is completed as follows:

FORM 2 DISTRICT WORKSHEET FOR DEVELOPMENT OF NEW SCHOOLS

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	=	(6) Construction Cost
Kindergarten	____		____*		____		____		____		$____
1-6	____		____		____		____		____		____
7-8	____		____		____		____		____		____
9-12	____		____		____		____		____		____
Special	____		____		____		____		____		____

(7) Total Construction Cost $____

(8) Cost of Land Acquisition ____

(9) Total Development Cost $____

*For double-session Kindergarten, divide the number of children by two.

FIGURE 2-2 FORM 2

(1) For each grade group, enter the number of classrooms required in Column 1. This is the classroom deficit for each grade group, aggregated across all schools, which was calculated on Line 18 of Form 1.

(2) For each grade group, enter the number of children per class in Column 2. This is the staffing ratio, shown on Line 15 of Form 1.

(3) For each grade group, determine the number of square feet required per child. (California districts may use the square foot allowances displayed in Table B-1 in Appendix B. Other districts may substitute state or local averages or allowances.) Enter the square feet per child in Column 3.

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	=	(6) Construction Cost
Kindergarten	1		29 *		55		1,595		55.32		$ 88,235
1-6	8		30		55		13,200		55.32		730,224

(4) Multiply Column 1 entries (classrooms required) by Column 2 entries (children per class) and multiply the results by Column 3 (square feet per child) to calculate the total square feet required for each grade group. Enter the result in Column 4.

(5) Determine the cost of construction per square foot for each grade group.* Enter this cost in Column 5.

(6) Multiply Column 4 (total square feet) by Column 5 (cost per square foot) to obtain construction cost for each grade group. Enter these costs in Column 6.

(7) Sum the entries in Column 6 to obtain the total construction cost across grade groups. Enter this total on Line 7.

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	=	(6) Construction Cost
Kindergarten	1		29*		55		1,595		55.32		$ 88,235
1-6	8		30		55		13,200		55.32		730,224
7-8											
9-12											
Special											

(7)	Total Construction Cost	$ 818,459
(8)	Cost of Land Acquisition	113,727
(9)	Total Development Cost	$ 932,186

*For double-session Kindergarten, divide the number of children by two.

*In 1975-76 ~~in~~ California, the average cost per square foot, including furnishings, for construction of new facilities was: Elementary, $55.32; Intermediate (middle), $53.23; High School, $57.87; Junior and Senior High, $60.97.

(8) When construction of one or more new schools is necessary, the calculation of total development costs will generally include the price of land. In some cases, the necessary land has already been acquired by the district. When the land must be purchased, there are two ways of estimating the cost:

- Using local sources, the district can obtain several estimates of the price of the land needed. The average of these estimates would then be used as the cost of land for the site.
- State (or regional) figures can be used to estimate the cost. For example, in California, site acquisition represented 12.2% of the total cost for development of a new school in the 1975-76 school year. Total development costs are defined as construction costs plus land acquisition costs. Thus, in the example, since construction costs amount to $818,459, the cost of land would be $113,727, and the total development cost would be $932,186.

  Let x = cost of development of a new school;

  then $.122x$ = cost of land

  and $.878x$ = cost of construction (Line 7).

  If $.878x = \$818,459$,

  then $x = \frac{\$818,459}{.878} = \$932,186$

  and land cost = $932,186 - $818,459 = $113,727.

Enter the cost of land on Line 8.

(9) Add Line 7 (construction cost) to Line 8 (land cost) to determine the total development cost. Enter this number on Line 9.

(7)	Total Construction Cost	$ 818,459
(8)	Cost of Land Acquisition	113,727
(9)	Total Development Cost	$ 932,186

Determining the Cost of Adding New Classrooms

The procedure for calculating the cost of constructing additional classrooms* at one or more existing schools uses Form 3 (District Worksheet for Construction of New Classrooms), shown in Figure 2-3. The SRI model assumes that there is sufficient space at the school sites to accommodate these classrooms; therefore, we have not made provision for land acquisition costs.

Completion of Form 3 requires the following steps:

(1) For each grade group, enter the number of classrooms required in Column 1. This is the classroom deficit for each grade group, aggregated across all schools, which was calculated on Line 18 of Form 1.

(2) For each grade group, enter the number of children per class in Column 2. This is the staffing ratio shown on Line 15 of Form 1.

(3) For each grade group, enter the number of square feet required per child in Column 3. (California districts should use the values specified by the state, as shown in Table B-1 in Appendix B. Other districts may substitute state or local averages or allowances.)

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	=	(6) Construction Cost
Kindergarten	____		____		____		____		____		$____
1-6	____		____		____		____		____		____
7-8	5		26		75		9,750		56.83		554,124.27

*Throughout the discussion we assume that the district will choose to construct classrooms or schools. The district may wish to consider the use of portable classrooms. This has the effect of changing the cost per square foot in Column 5. Otherwise the procedure is the same.

FORM 3 DISTRICT WORKSHEET FOR CONSTRUCTION OF NEW CLASSROOMS

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	=	(6) Construction Cost
Kindergarten	____		____*		____		____		____		$____
1-6	____		____		____		____		____		____
7-8	____		____		____		____		____		____
9-12	____		____		____		____		____		____
Special	____		____		____		____		____		____
							(7) Total Construction Cost				$____

*For double-session Kindergarten, divide the number of children by two.

FIGURE 2-3 FORM 3

(4) Multiply Column 1 by Column 2 and multiply the result by Column 3 to obtain the total square feet required. Enter this number in Column 4.

(5) Determine the construction cost per square foot and enter in Column 5. (California districts should use the procedures described in the Department of General Services Applicants Handbook and summarized in Tables B-2 through B-5 of Appendix B. Other districts may substitute state or local figures.)

(6) Multiply Column 4 (total square feet) by Column 5 (cost per square foot) to derive the total cost of constructing the new classrooms required. Enter the cost for each grade group in Column 6.

(7) Sum the costs shown in Column 6 to obtain the total construction costs across all grade groups. Enter the grand total on Line 7.

Grade Group	(1) Classrooms Required	×	(2) Children per Class	×	(3) Square Feet per Child	=	(4) Total Square Feet	×	(5) Dollars per Square Foot	(6) Construction Cost
Kindergarten	____		____*		____		____		____	$____
1-6	____		____		____		____		____	____
7-8	5		26		75		9,750		56.83	554,124.27
9-12	____		____		____		____		____	____
Special	____		____		____		____		____	____
						(7)	Total Construction Cost			$554,124.27

*For double-session Kindergarten, divide the number of children by two.

Determining Annual Capital Cost

The calculations involved in completing Forms 1, 2, and 3 produced a figure that represents the cost of school development avoided because of the YRS program (i.e., the costs that would be incurred under a traditional schedule that can be saved by the year-round use of existing facilities).

If this money were to be obtained in the bond market, additional costs (payment of interest and bond broker's fee) would be incurred. Calculation of the annual capital cost avoided under the year-round calendar must take these additional costs into account. Form 4A (District Worksheet for Calculation of Annual Capital Cost), shown in Figure 2-4, shows one procedure for calculating the annual capital cost. Form 4A should be completed as follows:

(1) Enter the total development cost (Line 9 on Form 2 or Line 7 on Form 3) on Line 1. This figure represents the principal--the amount of money to be financed.

(2) Multiply Line 1 by the appropriate rate to determine the bond broker's fee (administrative rate and overhead expense associated with brokering the bond). Enter the fee on Line 2. (In California, brokerage fees vary from 2% to 4% of the principal.)

(1)	PRINCIPAL	$ 1,375,626
(2)	BOND BROKER'S FEE	55,025

FORM 4A DISTRICT WORKSHEET FOR CALCULATION OF ANNUAL CAPITAL COST

(1)	PRINCIPAL	$_____	
(2)	BOND BROKER'S FEE	_____	
(3)	TOTAL BOND AMOUNT (Line 1 + Line 2)		$_____
(4)	ANNUAL PAYMENT		
	4a. Bond Life	_____	
	4b. Bond Interest Rate	_____	
	4c. Present Value	_____	
	4d. Annual Payment (Line 3 ÷ Line 4c)		$_____
(5)	TOTAL PAYOUT (Line 4a x Line 4d)	$_____	
(6)	TOTAL BOND INTEREST (Line 5 - Line 3)	$_____	

FIGURE 2-4 FORM 4A

(3) Add Line 1 to Line 2 to obtain the total amount of the bond. Enter this total on Line 3.

(4) Compute the annual payment as follows:

- Determine the duration of the bond and enter on Line 4a. (In California, most school bonds are issued for 20 years.)
- Estimate the interest rate and enter on Line 4b. (In California, most school bonds currently have interest rates of approximately 6%.)
- Use a table of present values to determine the present value appropriate to the duration and interest rate of the bond.* A table of present values is provided in Table B-6 of Appendix B. In the example, the present value for 20 years and 6% is 11.470. Enter the present value on Line 4c.
- Divide Line 3 (total bond amount) by Line 4c (present value) to determine the annual payment required.
- Enter the annual payment on Line 4d. This represents the total annual capital cost "avoided" by using existing facilities on a year-round basis.

(3)	TOTAL BOND AMOUNT (Line 1 + Line 2)		$ 1,430,651
(4)	ANNUAL PAYMENT		
	4a. Bond Life	20	
	4b. Bond Interest Rate	6%	
	4c. Present Value	11.470	
	4d. Annual Payment (Line 3 ÷ Line 4c)		$ 124,729.82

*Present value represents the amount that would have to be invested at the specified interest rate over the specified period to receive an annual payment of $1. Equivalently, it is the amount of indebtedness that, given the specified interest rate, would be paid off over the specified period by an annual payment of $1. Thus, the annual payment for a total bond amount of $1,430,651 at 6% for 20 years would be $1,430,651/11.470 = $124,729.82.

(5) Although the annual payment (Line 4d) is the figure that will be used in subsequent comparisons of costs under the traditional and year-round schedules, most districts will also be interested in determining the total payout over the life of the bond. To calculate this figure, multiply Line 4a (bond life) by Line 4d (annual payment). Enter the result on Line 5.

(6) To calculate the total interest paid, subtract Line 3 (total bond amount) from Line 5 (total payout). Enter the result on Line 6.

(3)	TOTAL BOND AMOUNT (Line 1 + Line 2)		$ 1,430,651
(4)	ANNUAL PAYMENT		
	4a. Bond Life	20	
	4b. Bond Interest Rate	6%	
	4c. Present Value	11.470	
	4d. Annual Payment (Line 3 ÷ Line 4c)		$ 124,729.82
(5)	TOTAL PAYOUT (Line 4a x Line 4d)	$ 2,494,596	
(6)	TOTAL BOND INTEREST (Line 5 - Line 3)	$ 1,063,945	

3 OPERATING COSTS

The second major component of costs that may be affected by the introduction of a year-round program is operating costs. Operating costs are defined as the recurring costs of providing instruction and other services; major components of operating costs include salaries, benefits, materials and supplies, contracted services, and the like.

The procedure described in this chapter is designed to permit comparisons between the district's actual operating costs (with the YRS program) and a simulation (estimation) of costs for providing the same services to the same enrollment without a YRS program. Throughout this chapter we use the term "expanded" TCS program to refer to the schools, staff, and services that would be needed to serve the current enrollment, without use of double sessions or changes in the student/teacher ratio, under a traditional calendar.

Some operating costs are common to both YRS and expanded TCS programs. We refer to these as "core" costs. Other costs are unique to year-round programs or to expansions of traditional programs. Some costs (e.g., transportation, utilities) are generally higher under YRS; other costs are usually lower. Whether YRS results in an overall savings in district operating expenses (compared to the expanded TCS) depends on many factors.

The basic process for comparing operating costs under the two calendars uses Form 5 (District Worksheet for Comparing Current Operating Costs with Estimated Costs under the Expanded TCS Program), shown in Figure 3-1. Detailed instructions for completing Form 5 are provided in the remainder of this chapter. The information reported on Form 5 can be summarized as follows:

FORM 5 DISTRICT WORKSHEET FOR COMPARING CURRENT OPERATING COSTS WITH ESTIMATED COSTS UNDER EXPANDED TCS

Accounting Category	(1) Actual District Expenditures	(2) Actual Costs for Inter-Session	(3) Actual Costs for Summer Session	(4) Actual Costs for Mandatory Services (C1-C2-C3)	(5) YRS Incremental Operating Costs	(6) Core Operating Costs (C4-C5)	(7) Estimated Costs for Addl Schools & Classrooms Under Expanded TCS	(8) Estimated Costs for Mandatory Services under Expanded TCS (C6+C7)	(9) Estimated Costs for Summer School Under Expanded TCS	(10) Estimated District Expenditures Under Expanded TCS (C8+C9)
1000 Certificated Salaries										
2000 Classified Salaries										
3000 Employee Benefits										
4000 Books, Supplies and Equipment Replacement										
5000 Contracted Services										
6000 Sites, Building										
7000 Other Outgo										
TOTAL										

FIGURE 3-1 FORM 5

Column 1 — Actual district expenditures for the fiscal year in question (source--district records).

Column 2 — Actual district expenditures for intersession programs at year-round schools (source--district records).

Column 3 — Actual district expenditures for summer session programs at traditional-calendar schools (source--district records).

Column 4 — Actual district expenditures for mandatory services (Column 1 - Column 2 - Column 3).

Column 5 — Incremental costs for the year-round program that would not be incurred if all schools operated under a traditional calendar (source--Forms 7-10; see pp. 31-57).

Column 6 — Core operating costs that would be incurred under either the year-round or expanded traditional program (Column 4 - Column 5).

Column 7 — Estimated operating costs for the additional schools or classrooms required by the expanded traditional-calendar program (source--Forms 7B, 7C, 8B, 9B; see pp. 60-70.

Column 8 — Estimated operating costs for providing mandatory services under the expanded traditional-calendar program (Column 6 + Column 7).

Column 9 — Estimated cost for summer school under the expanded traditional-calendar program.

Column 10 — Estimated total cost to the district for the expanded traditional-calendar program (Column 8 + Column 9).

Determining Actual Expenditures (Form 5, Columns 1-4)

Columns 1-4 of Form 5 identify actual district expenditures during the fiscal year of interest. Several types of program costs should not be included in this analysis. For example, operating costs incurred in the conduct of categorical programs (e.g., for teachers, books, and materials) should be excluded because they are not drawn from the district general fund. Other special programs (such as those for mentally gifted minors) should also be excluded if they are not financed from the general fund.

Actual District Expenditures (Form 5, Column 1)

Enter in Column 1 the actual district expenditures over the fiscal year in question for each accounting category shown. These figures are usually available in the district budget. Entries in Column 1 should represent actual costs across all schools and the district office over the full fiscal year. Thus, the total under Column 1 reflects all operating costs paid for out of the general fund.

The accounting categories shown on Form 5 are used in California for budgeting and financial reporting. Districts in other states may need to examine their budgets on a line-item basis to combine costs into the seven categories used in our model. Form 6A (District Worksheet for Determining Actual District Expenditures), shown in Figure 3-2, shows the line-item breakdown of the cost categories. Districts outside California may use Form 6A to determine expenses within each category. (The total for each category is then entered in Column 1 of Form 5.) Districts in California will probably not need to complete Form 6A; they can enter figures from district budgets directly onto Column 1 of Form 5.

Intersession and Summer Session Costs (Form 5, Columns 2 and 3)

Enter in Column 2 of Form 5 the actual costs of intersession programs at year-round schools. Enter in Column 3 the actual costs of summer-school programs at traditional-calendar schools.

In many districts, intersession and summer school programs have separate budgets and accounting codes and are therefore easily separated from other costs. When they are not readily identifiable, budget categories should be examined line item by line item. The categories in which costs are most likely to be incurred are:

- Certificated salaries (salaries for teachers and other certificated personnel).
- Classified salaries (salaries for teachers' aides, clerical employees, and maintenance and operation personnel).
- Employee benefits.

FORM 6A DISTRICT WORKSHEET
FOR DETERMINING ACTUAL DISTRICT EXPENDITURES

	1100	Teachers' Salaries	
	1200	School Administration Salary	
	1300	Supervisors' Salaries	
	1400	Media Salaries	
	1500	Guidance Salaries	
	1600	Health Services	
	1700	Administration	
1000		TOTAL CERTIFICATED SALARIES	$ _____
	2100	Teacher Aide Salaries	
	2200	Management Salaries	
	2300	Clerical Salaries	
	2400	Maintenance & Operation Salaries	
	2500	Food Service	
	2600	Transportation Salaries	
	2900	Noon Supervisors	
2000		TOTAL CLASSIFIED SALARIES	$ _____
	3100	Retirement Annuity Fund (STRS)	
	3200	Classified Retirement (PERS)	
	3300	OASDHI	
	3400	Health & Welfare Benefits	
	3500	State Unemployment Insurance	
	3600	Workers' Compensation Long Term	
	3900	Other Benefits	
3000		TOTAL EMPLOYEE BENEFITS	$ _____
	4100	Supplementary Textbooks	
	4200	Other Books	
	4300	Instructional Supplies	
	4400	Instructional Media Materials and Supplies	
	4500	Other Supplies	
	4600	Transportation Supplies	
	4700	Food Services	
	4800	Equipment Replacement	
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT	$ _____

FIGURE 3-2 FORM 6A

	5100	Contracts for Personal Services	
	5200	Travel & Conferences	
	5300	Dues & Memberships	
	5400	Insurance	
	5500	Utilities	
	5600	Leases	
	5700	Legal Audit & Election	
	5800	Other Services & Expenses	
5000		TOTAL CONTRACTED SERVICES	$ _____
	6100	Sites and Improvement of Sites	
	6200	Buildings and Improvements of Buildings	
	6300	Books/Media for New or Expanded Libraries	
	6400	Equipment	
6000		TOTAL CAPITAL OUTLAY	$ _____
	7100	Debt Service	
	7200	Outgoing Tuition	
	7300	Interfund Transfers	
	7400	Other Transfers	
	7900	Contingency	
7000		TOTAL ALL OTHER OUTGO	$ _____
TOTAL EXPENDITURES			$ _____

Enter expenditures reported on this form in Column 1 of Form 5.

FIGURE 3-2 FORM 6A (Concluded)

- Books, supplies, and equipment (instructional supplies, other supplies, and transportation supplies).*

Forms 6B and 6C (Figures 3-3 and 3-4) are worksheets that can be used to determine the costs of intersession and summer school, respectively. The totals under each accounting category should be entered in Columns 2 and 3 of Form 5.

Actual Costs of Mandatory Services (Form 5, Column 4)

Subtract entries in Column 2 and Column 3 from Column 1 to obtain the actual costs for mandatory services. Enter the results in Column 4. Column 4 entries represent the actual costs to the district for the standard school year (i.e., the number of days pupils are required to attend) combined across year-round and traditional schools.

Determining Incremental Operating Costs of the Year-Round Program (Form 5, Column 5)

The introduction of a year-round program into one or more schools creates additional operating costs--costs that would not be incurred under a traditional program. Most noteworthy among these costs are those associated with salaries (including contract extensions and salaries for additional personnel), benefits, transportation, and utilities.

Analysis of the cost impact of a YRS program requires that we determine these costs and compare them with estimates of the costs that would be incurred under the "expanded" traditional-calendar program. Forms 7-11 are designed to enable identification of the incremental YRS costs for each of the relevant accounting categories. In a subsequent section of this chapter, we will describe the process for estimating operating costs under the expanded traditional program.

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*Usually transportation supply costs are estimated.

FORM 6B DISTRICT WORKSHEET
FOR DETERMINING ACTUAL EXPENDITURES FOR INTERSESSION

	1100	Teachers' Salaries	
	1200	School Administration Salary	
	1300	Supervisors' Salaries	
	1400	Media Salaries	
	1500	Guidance Salaries	
	1600	Health Services	
	1700	Administration	
1000		TOTAL CERTIFICATED SALARIES	$ _____
	2100	Teacher Aide Salaries	
	2200	Management Salaries	
	2300	Clerical Salaries	
	2400	Maintenance & Operation Salaries	
	2500	Food Service	
	2600	Transportation Salaries	
	2900	Noon Supervisors	
2000		TOTAL CLASSIFIED SALARIES	$ _____
	3100	Retirement Annuity Fund (STRS)	
	3200	Classified Retirement (PERS)	
	3300	OASDHI	
	3400	Health & Welfare Benefits	
	3500	State Unemployment Insurance	
	3600	Workers' Compensation Long Term	
	3900	Other Benefits	
3000		TOTAL EMPLOYEE BENEFITS	$ _____
	4100	Supplementary Textbooks	
	4200	Other Books	
	4300	Instructional Supplies	
	4400	Instructional Media Materials and Supplies	
	4500	Other Supplies	
	4600	Transportation Supplies	
	4700	Food Services	
	4800	Equipment Replacement	
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT	$ _____

FIGURE 3-3 FORM 6B

	5100	Contracts for Personal Services	
	5200	Travel & Conferences	
	5300	Dues & Memberships	
	5400	Insurance	
	5500	Utilities	
	5600	Leases	
	5700	Legal Audit & Election	
	5800	Other Services & Expenses	
5000		TOTAL CONTRACTED SERVICES	$ _____
	6100	Sites and Improvement of Sites	
	6200	Buildings and Improvements of Buildings	
	6300	Books/Media for New or Expanded Libraries	
	6400	Equipment	
6000		TOTAL CAPITAL OUTLAY	$ _____
	7100	Debt Service	
	7200	Outgoing Tuition	
	7300	Interfund Transfers	
	7400	Other Transfers	
	7900	Contingency	
7000		TOTAL ALL OTHER OUTGO	$ _____
TOTAL EXPENDITURES			$ _____

Enter expenditures reported on this form in Column 2 of Form 5.

FIGURE 3-3 FORM 6B (Concluded)

FORM 6C DISTRICT WORKSHEET
FOR DETERMINING ACTUAL EXPENDITURES FOR SUMMER SESSION

	1100	Teachers' Salaries	
	1200	School Administration Salary	
	1300	Supervisors' Salaries	
	1400	Media Salaries	
	1500	Guidance Salaries	
	1600	Health Services	
	1700	Administration	
1000		TOTAL CERTIFICATED SALARIES	$ _____
	2100	Teacher Aide Salaries	
	2200	Management Salaries	
	2300	Clerical Salaries	
	2400	Maintenance & Operation Salaries	
	2500	Food Service	
	2600	Transportation Salaries	
	2900	Noon Supervisors	
2000		TOTAL CLASSIFIED SALARIES	$ _____
	3100	Retirement Annuity Fund (STRS)	
	3200	Classified Retirement (PERS)	
	3300	OASDHI	
	3400	Health & Welfare Benefits	
	3500	State Unemployment Insurance	
	3600	Workers' Compensation Long Term	
	3900	Other Benefits	
3000		TOTAL EMPLOYEE BENEFITS	$ _____
	4100	Supplementary Textbooks	
	4200	Other Books	
	4300	Instructional Supplies	
	4400	Instructional Media Materials and Supplies	
	4500	Other Supplies	
	4600	Transportation Supplies	
	4700	Food Services	
	4800	Equipment Replacement	
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT	$ _____

FIGURE 3-4 FORM 6C

	5100	Contracts for Personal Services	
	5200	Travel & Conferences	
	5300	Dues & Memberships	
	5400	Insurance	
	5500	Utilities	
	5600	Leases	
	5700	Legal Audit & Election	
	5800	Other Services & Expenses	
5000		TOTAL CONTRACTED SERVICES	$ _____
	6100	Sites and Improvement of Sites	
	6200	Buildings and Improvements of Buildings	
	6300	Books/Media for New or Expanded Libraries	
	6400	Equipment	
6000		TOTAL CAPITAL OUTLAY	$ _____
	7100	Debt Service	
	7200	Outgoing Tuition	
	7300	Interfund Transfers	
	7400	Other Transfers	
	7900	Contingency	
7000		TOTAL ALL OTHER OUTGO	$ _____
TOTAL EXPENDITURES			$ _____

Enter expenditures reported on this form in Column 3 of Form 5.

FIGURE 3-4 FORM 6C (Concluded)

Instructions for completing these forms are provided in the following sections. The relevant cost information from Forms 7-11 will be aggregated across schools on Form 6D (Worksheet for Determining Incremental Operating Costs of YRS), shown in Figure 3-5, and entered in Column 5 of Form 5.

Teacher Salaries (Forms 7A and 7B)*

Several categories of operating costs are affected by the introduction of a year-round calendar, but teacher salaries are usually the most important. When a school shifts from a 9-month schedule to a 12-month schedule, its student population (and therefore its need for teachers) increases by up to 33%. There are two ways of meeting the increased need for teachers: (1) hire additional teachers and (2) extend the contracts of teachers already employed. Districts with YRS programs usually have a blanket policy regarding contract extensions: Either no teacher may extend his/her contract, or any teacher may extend. Personnel costs are affected by which teachers choose to extend their contracts, and for how long.

As an example, consider a school in which the standard teaching contract is for 175 days and the average daily salary is $60. Assume that the school would need 30 teachers with standard contracts:

$30 \times 175 = 5,250$ total teaching days

$\$60 \times 5,250 = \$315,000$ total teacher salaries.

Assume that because of contract extensions, the 5,250 total days are covered by only 28 teachers. If the teachers with extended contracts earn less than the average salary, the funds expended for teachers' wages are decreased (i.e., the average cost of a teaching day is lower); conversely, if the teachers who extend earn more than average, the funds

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*The process for determining incremental costs for benefits (retirement, health insurance, etc.) is described in a subsequent section of this chapter (see pp. 50-51).

FORM 6D DISTRICT WORKSHEET
FOR DETERMINING INCREMENTAL OPERATING COSTS OF YRS

	1100	Teachers' Salaries	
	1200	School Administration Salary	
	1300	Supervisors' Salaries	
	1400	Media Salaries	
	1500	Guidance Salaries	
	1600	Health Services	
	1700	Administration	
1000		TOTAL CERTIFICATED SALARIES	$ _____
	2100	Teacher Aide Salaries	
	2200	Management Salaries	
	2300	Clerical Salaries	
	2400	Maintenance & Operation Salaries	
	2500	Food Service	
	2600	Transportation Salaries	
	2900	Noon Supervisors	
2000		TOTAL CLASSIFIED SALARIES	$ _____
	3100	Retirement Annuity Fund (STRS)	
	3200	Classified Retirement (PERS)	
	3300	OASDHI	
	3400	Health & Welfare Benefits	
	3500	State Unemployment Insurance	
	3600	Workers' Compensation Long Term	
	3900	Other Benefits	
3000		TOTAL EMPLOYEE BENEFITS	$ _____
	4100	Supplementary Textbooks	
	4200	Other Books	
	4300	Instructional Supplies	
	4400	Instructional Media Materials and Supplies	
	4500	Other Supplies	
	4600	Transportation Supplies	
	4700	Food Services	
	4800	Equipment Replacement	
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT	$ _____

FIGURE 3-5 FORM 6D

	5100	Contracts for Personal Services	
	5200	Travel & Conferences	
	5300	Dues & Memberships	
	5400	Insurance	
	5500	Utilities	
	5600	Leases	
	5700	Legal Audit & Election	
	5800	Other Services & Expenses	
5000		TOTAL CONTRACTED SERVICES	$ _____
	6100	Sites and Improvement of Sites	
	6200	Buildings and Improvements of Buildings	
	6300	Books/Media for New or Expanded Libraries	
	6400	Equipment	
6000		TOTAL CAPITAL OUTLAY	$ _____
	7100	Debt Service	
	7200	Outgoing Tuition	
	7300	Interfund Transfers	
	7400	Other Transfers	
	7900	Contingency	
7000		TOTAL ALL OTHER OUTGO	$ _____
TOTAL EXPENDITURES			$ _____

Enter expenditures reported on this form in Column 5 of Form 5.

FIGURE 3-5 FORM 6D (Concluded)

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expended for teachers' wages are increased. For example, if the average cost of a teaching day is $5 lower or higher:

$55 × 5,250 = $288,750 (a decrease of $26,250)

$65 × 5,250 = $341,250 (an increase of $26,250).

In districts where contract extension is permitted, Columns A-E of Form 7A (Worksheet for Calculating Actual Costs of Teacher Contract Extensions), shown in Figure 3-6, should be completed for each year-round school as follows:*

(1) List all teachers employed during the period in question.

(2) For each teacher who worked a standard contract:

- Enter the number of days worked in Column A.
- Enter the daily salary in Column B.
- Multiply Column A (days) by Column B (salary) to obtain the total salary. Enter this figure in both Column C and Column D.
- Enter "0" in Column E.

Name	SALARY COSTS (A) Total Days Worked	(B) Daily Salary	(C) Total Salary Under Standard Contract	(D) Total Salary Under Actual Contract (Col A × Col B)	(E) Incremental Salary (Col D - Col C)
Ortega	5.0	$ 56.67	$ -0-	$ 283.35	$ 283.35
→ Pottee	176.0	103.93	18,291.68	18,291.68	-0-
Prysmack	180.0	99.39	17,492.64	17,890.20	397.56

*If contract extensions are not permitted, the costs for teachers are the same under YRS and expanded TCS. In this case, enter "0" on Account 1100 of Form 6D. Do not complete Forms 7A and 7B.

FORM 7A WORKSHEET FOR CALCULATING ACTUAL COSTS OF TEACHER CONTRACT EXTENSIONS

Location:

Name	SALARY COSTS					BENEFITS COSTS			
	(A) Total Days Worked	(B) Daily Salary	(C) Total Salary Under Standard Contract	(D) Total Salary Under Actual Contract (Col A × Col B)	(E) Incremental Salary (Col D - Col C)	(F) Incremental Retirement Cost	(G) Incremental Health & Life Insurance Cost	(H) Incremental Long-Term Disability Cost	(I) Incremental Workers' Compensation Cost
TOTAL		$	$	$	$	$	$	$	$

FIGURE 3-6 FORM 7A

(3) For each teacher who worked a nonstandard contract:

- Enter the number of days worked in Column A.
- Enter the daily salary in Column B.
- Multiply Column B (daily salary) by the number of days in the standard contract to obtain the total salary under the standard contract. Enter this figure in Column C.
- Multiply Column A (actual contract days) by Column B (daily salary) to obtain the individual's actual total salary. Enter this figure in Column D.
- Subtract Column C (salary under standard contract) from Column D (salary under actual contract) to obtain the incremental cost of the contract extension. Enter this cost in Column E.

	SALARY COSTS				
Name	(A) Total Days Worked	(B) Daily Salary	(C) Total Salary Under Standard Contract	(D) Total Salary Under Actual Contract (Col A × Col B)	(E) Incremental Salary (Col D - Col C)
→ Ortega	5.0	$ 56.67	$ -0-	$ 283.35	$ 283.35
Pottee	176.0	103.93	18,291.68	18,291.68	-0-
→ Prysmack	180.0	99.39	17,492.64	17,890.20	397.56

(4) Sum the entries in Column A and in Columns C through E to obtain school-level totals.

(5) Sum the Column E totals across all year-round schools to obtain the total cost to the district. Enter this cost on Form 6D, under Account 1100 (Teachers' Salaries).

To compare incremental salary costs under YRS with the estimated cost of providing the same number of additional teaching days under the expanded TCS, complete Form 7B (Worksheet for Comparing Teacher Salaries under YRS and Expanded TCS), shown in Figure 3-7, for each year-round school, as follows:

(1) Determine how many teachers worked a contract equal to or longer than the standard contract. (This figure can be obtained by counting the entries in Column A, Form 7A, equal to or greater than the standard contract.) Enter the number of teachers on Line 1.

(2) Enter the length of the standard contract on Line 2.

(3) Multiply Line 1 by Line 2. This yields the total days covered by standard contracts. Enter this figure on Line 3.

(1)	Teachers on standard contract	15
(2)	Standard contract days	176
(3)	Total standard contract days (1×2)	2,640

FORM 7B WORKSHEET FOR COMPARING TEACHER SALARIES
UNDER YRS AND EXPANDED TCS

(1) Teachers on standard contracts _____

(2) Standard contract days _____

(3) Total standard contract days (1×2) _____

(4) Total standard contract expense (Column C from Form 7A) _____

(5) Average daily salary--traditional contracts (4-3) _____

(6) Total teaching days this school _____

(7) Total nonstandard contract days (6-3) _____

(8) Simulated expenses--nonstandard contracts (7×5) _____

(9) Actual expense--nonstandard contracts (Column E from Form 7A) _____

(10) YRS savings--nonstandard contracts (8-9) _____

FIGURE 3-7 FORM 7B

(4) Enter the total standard contract expense on Line 4. (This figure is the total under Column C on Form 7A.)

(5) Divide Line 4 by Line 3, and enter the result on Line 5. This is the average daily salary under standard contracts.

(6) Enter total teaching days for the school on Line 6. (This figure is the total under Column A on Form 7A.)

(7) Subtract Line 3 from Line 6, and enter the result on Line 7. This is the number of days covered by contract extensions.

(8) Multiply Line 7 by Line 5 (average daily salary) to obtain the simulated cost of the nonstandard contract days. Enter the result on Line 8.

(9) Enter the actual expense of nonstandard contract days on Line 9. (This figure is the total from Column E on Form 7A.)

(4)	Total standard contract expense (Column C from Form 7A)	$ 226,923.84
(5)	Average daily salary--traditional contracts (4-3)	$ 85.96
(6)	Total teaching days this school	3,541
(7)	Total nonstandard contract days (6-3)	901
(8)	Simulated expenses--nonstandard contracts (7×5)	$ 77,449.96
(9)	Actual expense--nonstandard contracts (Column E from Form 7A)	$ 55,774.57
(10)	YRS savings--nonstandard contracts (8-9)	$ 21,675.39

(10) Line 9 represents the actual cost for teacher salaries under contract extensions. Line 8 represents the simulated cost of salaries for the additional days (that is, what it would cost to hire additional teachers, with the same average salary, to provide the same total number of teaching days). Subtract the actual cost (Line 9) from the simulated cost (Line 8), and enter the result on Line 10. If this figure is positive, then teacher salaries are less expensive under the YRS program than under the simulated expansion of the TCS program. If the result is negative, then the YRS program costs more than its simulated counterpart.

Salaries for Other Certificated Personnel (Form 8A)

Determining how the YRS program affects costs for other certificated personnel (e.g., principals, librarians) is somewhat simpler. A principal will work a certain number of days under a traditional calendar and more days under a year-round calendar. The incremental cost is the salary associated with these additional days. (In some instances, a principal or other certificated staff member may choose not to extend his/her contract over the full period. If a substitute is employed for some or all of the period, the incremental cost includes the cost of the substitute.)

Form 8A (Worksheet for Calculating Incremental Costs for Other Certificated Personnel under YRS), shown in Figure 3-8, is designed to identify these costs. Columns A-F of Form 8A should be completed for each year-round school as follows:

FORM 8A WORKSHEET FOR CALCULATING INCREMENTAL COSTS FOR OTHER CERTIFICATED PERSONNEL UNDER YRS

Location:

Name	SALARY COSTS						BENEFITS COSTS			
	(A) Days in Standard Contract	(B) Days in Actual Contract	(C) Daily Salary	(D) Total Salary Under Standard Contract (Col A × Col C)	(E) Total Salary Under Actual Contract (Col B × Col C)	(F) Incremental (Contract Extension) Cost (Col E - Col D)	(G) Incremental Retirement Cost	(H) Incremental Health & Life Insurance Cost	(I) Incremental Long-Term Disability Cost	(J) Incremental Workers' Compensation Cost
TOTAL			$	$	$	$	$	$	$	$

FIGURE 3-8 FORM 8A

(1) Enter the name and title of each certificated person (other than teachers).

(2) Enter the length of the standard contract for this title in Column A.

(3) Enter the number of days in the actual contract in Column B.

(4) Enter the daily salary rate in Column C.

(5) Multiply Column C by Column A (days in standard contract) to obtain the standard contract salary. Enter this figure in Column D.

(6) Multiply Column C by Column B (days in actual contract) to obtain the actual salary. Enter the actual salary in Column E.

(7) Subtract Column D (standard contract salary) from Column E (actual contract salary) to determine the cost of the contract extension. Enter this cost in Column F.

Name	SALARY COSTS					
	(A) Days in Standard Contract	(B) Days in Actual Contract	(C) Daily Salary	(D) Total Salary Under Standard Contract (Col A × Col C)	(E) Total Salary Under Actual Contract (Col B × Col C)	(F) Incremental (Contract Extension) Cost (Col E - Col D)
J. Smith (principal)	204	226	$ 104	$ 21,216	$ 23,504	$ 2,288

(8) If the year-round schedule necessitated the presence of extra certificated personnel (e.g., a principal from another school who filled in because the principal of the school in question did not extend his/her contract), list the names of these persons and the positions they filled. Enter "0" in Column A and the number of days worked in Column B. Enter the daily salary rate in Column C. Enter "0" in Column D. Multiply Column B (days worked) by Column C (daily salary) to obtain the total salary; enter this amount in Column E and Column F.

(9) Sum the entries in Column F to obtain the incremental cost associated with contract extensions for certificated personnel other than teachers.

(10) Sum the Column F totals across all Forms 8A to obtain the total incremental cost to the district. Enter this cost on Form 6D, under Account 1700 (Administration). Note: These costs may be shown separately for different categories of certificated personnel, under Accounts 1200-1700, or combined across categories and shown under Account 1700.

Salaries for Classified Personnel (Form 9A)

The situation for classified personnel is similar to that for non-teaching certificated personnel. A teacher aide will be employed for a certain number of days under a traditional calendar, and for more days on a year-round schedule. The incremental cost for YRS is the cost of these additional days.

To determine incremental salary costs for classified personnel, complete Columns A-F of Form 9A (Worksheet for Calculating Incremental Costs for Classified Personnel under YRS), shown in Figure 3-9, for each year-round school as follows:

(1) Enter the name and personnel classification of each classified employee with an extended contract.

(2) Enter the length of the standard contract (in days or months) for this classification in Column A.

(3) Enter the number of days or months in the employee's actual contract in Column B.

(4) Enter the daily (or monthly) salary rate in Column C.

(5) Multiply Column C by Column A (standard contract) to obtain the standard contract salary. Enter this figure in Column D.

(6) Multiply Column C by Column B (days in actual contract) to obtain the actual salary. Enter this cost in Column E.

(7) Subtract Column D (standard contract salary) from Column E (actual contract salary) to determine the cost of the contract extension. Enter this cost in Column F.

Name	SALARY COSTS					
	(A) Days in Standard Contract	(B) Days in Actual Contract	(C) Daily Salary	(D) Total Salary Under Standard Contract (Col A × Col C)	(E) Total Salary Under Actual Contract (Col B × Col C)	(F) Incremental (Contract Extension) Cost (Col E - Col D)
J. Jones (secretary	10 mos.	12 mos.	$689/mo.	$ 6,890	$ 8,268	$ 1,378

FORM 9A WORKSHEET FOR CALCULATING INCREMENTAL COSTS FOR OTHER CERTIFICATED PERSONNEL UNDER YRS

Location:

Name	SALARY COSTS						BENEFITS COSTS			
	(A) Days in Standard Contract	(B) Days in Actual Contract	(C) Daily Salary	(D) Total Salary Under Standard Contract (Col A × Col C)	(E) Total Salary Under Actual Contract (Col B × Col C)	(F) Incremental (Contract Extension) Cost (Col E - Col D)	(G) Incremental Retirement Cost	(H) Incremental Health & Life Insurance Cost	(I) Incremental Long-Term Disability Cost	(J) Incremental Workers' Compensation Cost
TOTAL			$	$	$	$	$	$	$	$

FIGURE 3-9 FORM 9A

(8) If the year-round schedule necessitated the presence of additional classified personnel, list their names and classifications. Enter "0" in Column A. Enter the number of days worked in Column B and the daily salary in Column C. Enter "0" in Column D. Multiply Column B by Column C to obtain the total actual salary and enter the result in Columns E and F.

(9) If the year-round schedule resulted in hiring new employees at the district office, or in extending contracts of persons already employed (e.g., bus drivers), complete a separate Form 9A for these personnel.

(10) Sum the Column F totals across all Forms 9A to obtain the total incremental cost to the district. Enter this cost on Form 6D, under Account 2000 (Total Classified Salaries).

Benefits for Certificated and Classified Personnel (Forms 7A, 8A, and 9A)

It is also necessary to determine the incremental costs of personnel benefits under YRS. These costs will vary according to state and local policies; our experience indicates that four categories of benefits may be affected:

- Retirement
- Health and life insurance
- Long-term disability insurance
- Workers' compensation.

Different benefit schedules may apply for teachers, other certificated personnel, and classified employees. However, the procedure for determining the YRS incremental costs is the same for all three groups:

(1) Determine the applicable benefit schedule.

(2) Calculate the additional benefits paid to each employee working a nonstandard contract. Enter these amounts in Columns F-I on Form 7A and Columns G-J on Forms 8A and 9A.

(3) Total the additional benefits shown on each form.

(4) Sum the totals from all Forms 7A, 8A, and 9A to obtain the total incremental cost for benefits. Enter this total cost on Form 6D, under Account 3000 (Total Employee Benefits).

An example is given below.

- Assume that the following benefit schedule applies for teachers:

Retirement = daily salary × days in contract × .0560
(In this example, retirement contributions apply only to teachers working more than 99 days, and contributions apply only to the first 176 days worked. Thus, costs will not increase when standard contracts are extended.)

Health and life insurance =

$$\frac{\text{days in contract (up to 176)}}{\text{standard contract}} \times \$735.84$$

(Costs will not increase when standard contracts are extended. However, additional costs will be incurred for new personnel.)

Long-term disability = daily salary × days in contract × .007.

Workers' compensation = daily salary × days in contract × .0089.

- Assume that Jane Smith has a teaching contract for 226 days at a daily salary of $104. Under this schedule, the benefits associated with her contract extension are:

  Retirement no additional cost

  Health and life insurance no additional cost

  Long-term disability $104 × (226-176) × .007 = $36.40

  Workers' compensation $104 × (226-176) × .0089 = $46.28.

Transportation Costs (Form 10)

In California, transportation supplies are part of the accounting category labeled Books, Supplies, and Equipment Replacement. We have found that costs for textbooks and instructional materials are not affected by a change to a year-round calendar, but that transportation costs are. Typically, the buses are in use for more days over the year, and bus routes may change significantly.

Form 10 (Worksheet for Calculating Incremental Transportation Costs under YRS), shown in Figure 3-10, is designed to calculate the incremental YRS transportation costs.* Form 10 should be completed as follows:

*Form 10 does not include incremental salary costs for transportation personnel. Salary and benefits costs for bus drivers and transportation yard personnel with extended contracts should be shown on Form 9A.

FORM 10 WORKSHEET FOR CALCULATING INCREMENTAL TRANSPORTATION COSTS UNDER YRS

(1) YRS Buses _____

(2) Total Miles Driven _____

(3) Average Miles per Day (Line 2 ÷ Line 1) _____

(4) Additional Days Used _____

(5) Incremental Miles Driven (Line 3 × Line 4) _____

(6) Cost per Mile

a. Gasoline _____

b. Maintenance materials _____

c. Overhead _____

d. Total per-mile cost $ _____

(7) Total Incremental Cost (Line 5 × Line 6d) $ _____

FIGURE 3-10 FORM 10

(1) Determine the number of buses that service the year-round schools. Enter this figure on Line 1.

(2) Enter the total miles per day traveled by these buses on Line 2.

(3) Divide Line 2 (total miles) by Line 1 (number of buses) to determine the average miles per day. Enter this average on Line 3.

(1)	YRS Buses	10
(2)	Total Miles Driven	6,690
(3)	Average Miles per Day (Line 2 ÷ Line 1)	669

(4) Determine the number of additional days that these buses are in operation due to the year-round schedule. (For example, if the year-round school operates 235 days a year and the traditional school operates 175 days a year, the YRS buses are in operation for 60 additional days.) Enter the number of additional days on Line 4.

(5) Multiply Line 3 (average miles per day) by Line 4 (additional days used under YRS) to determine the number of additional miles driven under YRS. Enter the number of miles on Line 5.

(6) At this point it is necessary to calculate the cost of these additional miles. The components of this cost are:

- Gasoline
- Maintenance materials (oil, parts)
- Overhead (transportation yard administration).

(3)	Average Miles per Day (Line 2 ÷ Line 1)	669
(4)	Additional Days Used	60
(5)	Incremental Miles Driven (Line 3 × Line 4)	40,140

If the transportation yard keeps detailed records, the component costs can be calculated directly as follows:

- Gasoline. Divide the average price of gasoline by the average number of miles per gallon. (For example, if a bus averages 10 miles per gallon and the average price of gasoline is 60¢ per gallon, the cost of gasoline is 6¢ per mile.) Enter the cost per mile for gasoline on Line 6a.
- Maintenance materials. It may be possible to obtain these costs directly from transportation yard records. For example, if each bus is serviced every 60 days and the YRS buses are operated for 60 additional days, the YRS will receive one extra servicing. Dividing the cost of the additional servicing by the "extra" miles driven (shown on Line 5) yields the per-mile maintenance cost. An alternative procedure is to divide the total miles driven by all buses into the total maintenance costs for the period in question. Enter the per-mile maintenance cost on Line 6b.
- Overhead expense. Divide the total miles driven by the buses into the total overhead expense for the period. Sum the entries on Lines 6a-c to obtain the total cost per mile. Enter this cost on Line 6d.

(7) Multiply Line 5 (incremental miles driven) by Line 6d (cost per mile) to obtain the total incremental cost. Enter this cost on Line 7.

(5)	Incremental Miles Driven (Line 3 × Line 4)		40,140
(6)	Cost per Mile		
	a. Gasoline	.06	
	b. Maintenance materials	.08	
	c. Overhead	.16	
	d. Total per-mile cost		$ .30
(7)	Total Incremental Cost (Line 5 × Line 6d)		$ 12,042

(8) Enter the incremental cost (Line 7) on Form 6D, under Account 4600 (Transportation Supplies).

Utilities Costs (Form 11)

Expenses for utilities (heat, light, water, etc.) are included within the Contracted Services accounting category. The critical question is: What utilities would not have been used if the year-round school(s) had been operated on a traditional schedule? Form 11 (Worksheet for Calculating Incremental Utilities Cost under YRS), shown in Figure 3-11, is designed to answer this question. This form should be completed for each year-round school. The procedure for completing Form 11 calls for three steps:

(1) Determine the actual utilities expense over the year in question. This expense is the cost of utilities under the year-round schedule. Enter the YRS (actual) utilities cost on Line 1.

(2) Estimate the utilities cost under a traditional schedule. There are three ways to do this:

(a) Find the utilities charges for the last year the school was on a traditional calendar. Adjust these charges for rate increases.

(b) Find the utilities expense at a comparable* school (i.e., same total floor space) that is operating under a traditional calendar.

(c) Take the utilities expense at the YRS school for the period September through June. Add to this the July-August utilities expense from a comparable* school on a traditional calendar.

These techniques are ordered by level of precision; the first method will give the most accurate results, the last will give the least accurate. Enter the TCS utilities cost (estimated) on Line 2.

(3) Subtract Line 2 (TCS cost) from Line 1 (YRS cost) to determine the incremental utilities cost for the year-round schedule. Enter the incremental cost on Line 3.

(4) Sum the incremental cost (Line 3) across all year-round schools. Enter the total on Form 6D, under Account 5500 (Utilities).

---

*Comparability requires that the school not have a summer session.

FORM 11 WORKSHEET FOR CALCULATING INCREMENTAL UTILITIES COST UNDER YRS

(1)	Utilities Cost under YRS	$ _____
(2)	Utilities Cost under TCS (estimated)	$ _____
(3)	Incremental Cost due to YRS (Line 1 - Line 2)	$ _____

FIGURE 3-11 FORM 11

Summarizing the Incremental YRS Costs (Form 6D)

At this point, Form 6D (the worksheet for YRS incremental operating costs) should contain the following information:

- Account 1100, Teachers' Salaries -- the total under Column E from all Forms 7A.
- Account 1700, Administration -- the total under Column F on all Forms 8A.
- Account 2000, Total Classified Salaries -- the total under Column F on all Forms 9A.
- Account 3000, Total Employee Benefits -- the total under Columns F-I on all Forms 7A and Columns G-J on all Forms 8A and 9A.
- Account 4600, Transportation Supplies -- Line 7 on Form 10.
- Account 5500, Utilities -- Line 3 on all Forms 11.

Our experience indicates that these are the accounts under which operating costs directly attributable to year-round programs usually occur. If there are other incremental YRS operating costs, they should be added to the appropriate accounts on Form 6D. (Important note: Do not include costs associated with converting to the year-round program, such as teacher training or installation of air conditioning. Our model regards these as transition costs. Procedures for calculating transition costs are described in Chapter 4.)

Combine line-item entries on Form 6D to yield subtotals as shown (Accounts 1000, 2000, 3000, etc.), and enter these subtotals in Column 5 of Form 5. An example of a completed Form 6D is shown in Figure 3-12.

Determining Core Operating Costs (Form 5, Column 6)

Column 6 on Form 5 is labeled "Core Operating Costs." These are the basic costs of instruction that are common to both the traditional and year-round calendars. In subsequent sections of this chapter, we will describe a process for estimating costs unique to the expanded traditional-calendar program (that is, costs that would result from adding the new schools or classrooms needed to house all students adequately under a traditional schedule). Estimation of these costs will make possible the comparison of operating costs with and without the year-round program.

FORM 6D DISTRICT WORKSHEET
FOR DETERMINING INCREMENTAL OPERATING COSTS OF YRS

	1100	Teachers' Salaries	(20,026.37)
	1200	School Administration Salary	13,072.74
	1300	Supervisors' Salaries	2,997.12
	1400	Media Salaries	3,460.00
	1500	Guidance Salaries	2,446.11
	1600	Health Services	
	1700	Administration	
1000		TOTAL CERTIFICATED SALARIES	$ 1,969.60
	2100	Teacher Aide Salaries	
	2200	Management Salaries	
	2300	Clerical Salaries	9,266.93
	2400	Maintenance & Operation Salaries	4,176.90
	2500	Food Service	
	2600	Transportation Salaries	12,978.82
	2900	Noon Supervisors	
2000		TOTAL CLASSIFIED SALARIES	$ 26,422.65
	3100	Retirement Annuity Fund (STRS)	2,129.74
	3200	Classified Retirement (PERS)	1,594.30
	3300	OASDHI	1,204.24
	3400	Health & Welfare Benefits	5,241.99
	3500	State Unemployment Insurance	237.94
	3600	Workers' Compensation Long Term	1,304.80
	3900	Other Benefits	
3000		TOTAL EMPLOYEE BENEFITS	$ 11,713.01
	4100	Supplementary Textbooks	
	4200	Other Books	
	4300	Instructional Supplies	
	4400	Instructional Media Materials and Supplies	
	4500	Other Supplies	
	4600	Transportation Supplies	12,042.00
	4700	Food Services	
	4800	Equipment Replacement	
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT	$ 12,042.00

FIGURE 3-12 EXAMPLE OF COMPLETED FORM 6D

	5100	Contracts for Personal Services	
	5200	Travel & Conferences	
	5300	Dues & Memberships	
	5400	Insurance	10,394.02
	5500	Utilities	
	5600	Leases	
	5700	Legal Audit & Election	
	5800	Other Services & Expenses	
5000		TOTAL CONTRACTED SERVICES	$ 10,394.02
	6100	Sites and Improvement of Sites	
	6200	Buildings and Improvements of Buildings	
	6300	Books/Media for New or Expanded Libraries	
	6400	Equipment	
6000		TOTAL CAPITAL OUTLAY	$ --
	7100	Debt Service	
	7200	Outgoing Tuition	
	7300	Interfund Transfers	
	7400	Other Transfers	
	7900	Contingency	
7000		TOTAL ALL OTHER OUTGO	$ 4,076*
TOTAL EXPENDITURES			$ 66,617.28

Enter expenditures reported on this form in Column 5 of Form 5.

*Amortized Transition Costs

FIGURE 3-12 EXAMPLE OF COMPLETED FORM 6D (Concluded)

To determine the core operating costs, subtract entries in Column 5 of Form 5 (YRS incremental costs) from Column 4 entries (actual costs of mandatory services). Enter the results in Column 6.

Estimating Operating Costs for Additional Schools or Classrooms Under Expanded TCS (Form 5, Column 7)

The number of schools or classrooms needed to house all students in the district under a traditional calendar, without double sessions or changes in the student-teacher ratio, was calculated in Chapter 2. In this section we describe a procedure for estimating the operating costs associated with the additional schools or classrooms needed under the expanded TCS program. These costs will be entered on Form 6E (District Worksheet for Estimating Costs of Additional Schools/Classrooms under Expanded TCS), shown in Figure 3-13, and summarized in Column 7 of Form 5.

Teachers' Salaries (Form 7B)

If district policy does not allow extended contracts, enter "0" on Form 6E, Account 1100. The required number of teachers is already present in the district. If the district converted to a traditional schedule, some teachers would be moved from the year-round schools to staff the new classrooms.

If district policy does permit contract extensions, then it would be necessary to hire additional teachers under the expanded TCS program to cover the teaching days currently taught under extended contracts. To determine the salary cost for these teachers, sum Line 8 from all Forms 7B (see pp. 42-45). Enter the resulting figure on Form 6E, under Account 1100 (Teachers' Salaries).

Salaries for Other Certificated Personnel (Form 8B)

If it is necessary to build new schools to accommodate the expanded TCS program (see Chapter 2), then additional certificated personnel will be needed. The number and types of additional staff required can be estimated based on comparison schools or on district policy (e.g., the enrollment level needed to hire a vice principal). To estimate the cost

FORM 6E DISTRICT WORKSHEET
FOR ESTIMATING COSTS OF ADDITIONAL SCHOOLS/CLASSROOMS UNDER EXPANDED TCS

	1100	Teachers' Salaries
	1200	School Administration Salary
	1300	Supervisors' Salaries
	1400	Media Salaries
	1500	Guidance Salaries
	1600	Health Services
	1700	Administration
1000		TOTAL CERTIFICATED SALARIES
	2100	Teacher Aide Salaries
	2200	Management Salaries
	2300	Clerical Salaries
	2400	Maintenance & Operation Salaries
	2500	Food Service
	2600	Transportation Salaries
	2900	Noon Supervisors
2000		TOTAL CLASSIFIED SALARIES
	3100	Retirement Annuity Fund (STRS)
	3200	Classified Retirement (PERS)
	3300	OASDHI
	3400	Health & Welfare Benefits
	3500	State Unemployment Insurance
	3600	Workers' Compensation Long Term
	3900	Other Benefits
3000		TOTAL EMPLOYEE BENEFITS
	4100	Supplementary Textbooks
	4200	Other Books
	4300	Instructional Supplies
	4400	Instructional Media Materials and Supplies
	4500	Other Supplies
	4600	Transportation Supplies
	4700	Food Services
	4800	Equipment Replacement
4000		TOTAL BOOKS, SUPPLIES, AND EQUIPMENT REPLACEMENT

FIGURE 3-13 FORM 6E

	5100	Contracts for Personal Services
	5200	Travel & Conferences
	5300	Dues & Memberships
	5400	Insurance
	5500	Utilities
	5600	Leases
	5700	Legal Audit & Election
	5800	Other Services & Expenses
5000		TOTAL CONTRACTED SERVICES
	6100	Sites and Improvement of Sites
	6200	Buildings and Improvements of Buildings
	6300	Books/Media for New or Expanded Libraries
	6400	Equipment
6000		TOTAL CAPITAL OUTLAY
	7100	Debt Service
	7200	Outgoing Tuition
	7300	Interfund Transfers
	7400	Other Transfers
	7900	Contingency
7000		TOTAL ALL OTHER OUTGO

TOTAL EXPENDITURES

Enter expenditures reported on this form in Column 7 of Form 5.

FIGURE 3-13 FORM 6E (Concluded)

for these employees, complete Columns A-C of Form 8B (Worksheet for Estimating Additional Costs for Certificated Personnel under Expanded TCS), shown in Figure 3-14, as follows:

(1) Enter the position to be filled.

(2) Enter the number of days in the standard contract for this position in Column A.

(3) Determine the entry-level daily salary for the position. Enter the daily salary in Column B.

(4) Multiply Column A by Column B to obtain the yearly salary. Enter the yearly salary in Column C.

(5) Sum the entries in Column C to obtain the incremental salary cost for these new employees.

(6) Sum the totals under Column C for all Forms 8B to obtain the total cost for the additional salaries. Enter this figure on Form 6E, under Account 1700.

Note: If new classrooms are added to existing school plants, it may be necessary to hire additional personnel. For each school at which additional personnel are required, complete a Form 8B as described above.

	SALARY COSTS		
	(A)	(B)	(C)
Position To Be Filled	Days in Standard Contract	Entry-Level Daily Salary	Incremental Salary Cost (Col A × Col B)
Principal	204	$ 95	$ 19,380

Salaries for Classified Personnel (Form 9B)

Additional classified personnel will probably be needed to staff the new schools or classrooms required under the expanded TCS program. The procedure for calculating salaries for these personnel uses Form 9B (Worksheet for Estimating Additional Costs for Classified Personnel Under Expanded TCS), shown in Figure 3-15. Complete Columns A-C of Form 9B for each school affected (and for the district office if new personnel

FORM 8B WORKSHEET FOR ESTIMATING ADDITIONAL COSTS FOR OTHER CERTIFICATED PERSONNEL UNDER EXPANDED TCS

Location:

Position To Be Filled	SALARY COSTS			BENEFITS COSTS			
	(A) Days in Standard Contract	(B) Entry-Level Daily Salary	(C) Incremental Salary Cost (Col A × Col B)	(D) Incremental Retirement Cost	(E) Incremental Health & Life Insurance Cost	(F) Incremental Long-Term Disability Cost	(G) Incremental Workers' Compensation Cost
TOTAL			$	$	$	$	$

FIGURE 3-14 FORM 8B

FORM 9B WORKSHEET FOR ESTIMATING ADDITIONAL COSTS FOR OTHER CERTIFICATED PERSONNEL UNDER EXPANDED TCS

Location:

	SALARY COSTS			BENEFITS COSTS			
Position To Be Filled	(A) Days in Standard Contract	(B) Entry-Level Daily Salary	(C) Incremental Salary Cost (Col A × Col B)	(D) Incremental Retirement Cost	(E) Incremental Health & Life Insurance Cost	(F) Incremental Long-Term Disability Cost	(G) Incremental Workers' Compensation Cost
TOTAL			$	$	$	$	$

FIGURE 3-15 FORM 9B

would be added there), using the same procedure as that described above for Form 8B. Sum the totals under Column C across all Forms 9B to obtain the district total; enter this figure on Form 6E, under Account 2000 (Total Classified Salaries).

Benefits (Forms 7C, 8B, 9B)

Using the district benefits schedule, calculate the cost of benefits for additional certificated personnel (other than teachers) and classified personnel. Enter these costs in Columns D-G of Forms 8B and 9B, respectively.

To calculate the cost of benefits for the additional teachers, complete Form 7C (Figure 3-16) as follows:

(1) Sum Line 7 from Form 7B (see pp. 42-45) across all YRS schools. Enter the result on Line 1. This is the total number of teaching days required for additional teachers under the expanded TCS program.

(2) Enter the number of days in the standard teaching contract on Line 2.

(3) Divide Line 1 by Line 2 to determine the number of additional teachers who would be needed under the expanded TCS program. Enter the result on Line 3.

(4) Estimate the average daily salary for these teachers by summing the average for each school (Form 7B, Line 5) and dividing the result by the number of schools affected. Enter the resulting average on Line 4.

(5) Compute the per-teacher cost of benefits, using the district benefit schedule and the average daily salary shown on Line 4.

   a. Enter the per-teacher retirement cost on Line 5a.

   b. Enter the per-teacher cost for health and life insurance on Line 5b.

   c. Enter the per-teacher cost for long-term disability insurance on Line 5c.

   d. Enter the per-teacher cost for workers' compensation on Line 5d.

   e. Add Lines 5a-5d to derive the total per-teacher benefits cost. Enter the result on Line 5e.

(6) Multiply Line 5e (per-teacher cost) by Line 3 (number of teachers) to obtain the total benefits cost for the additional teachers. Enter this cost on Line 6.

FORM 7C WORKSHEET FOR ESTIMATING ADDITIONAL COST FOR TEACHER BENEFITS UNDER EXPANDED TCS

(1)	Total Teaching Days Required		_____
(2)	Days in Standard Contract		_____
(3)	Number of Teachers Needed (Line 1 ÷ Line 2)		_____
(4)	Average Daily Salary		$ _____
(5)	Per-Teacher Benefits Cost		
	a. Retirement	$_____	
	b. Health and Life Insurance	_____	
	c. Long-term Disability	_____	
	d. Workers' Compensation	_____	
	e. Total Cost per Teacher		$ _____
(6)	Total Benefits Cost (Line 3 × Line 5e)		$ _____

FIGURE 3-16 FORM 7C

(1)	Total Teaching Days Required		1,760
(2)	Days in Standard Contract		176
(3)	Number of Teachers Needed (Line 1 ÷ Line 2)		10
(4)	Average Daily Salary		$ 86.00
(5)	Per-Teacher Benefits Cost		
	a. Retirement	$847.62	
	b. Health and Life Insurance	735.84	
	c. Long-term Disability	105.96	
	d. Workers' Compensation	134.71	
	e. Total Cost per Teacher		$ 1,824.13
(6)	Total Benefits Cost (Line 3 × Line 5e)		$ 18,241.30

Add the total costs from Form 7C and all Forms 8B and Forms 9B to derive the total benefits for all additional personnel. Enter this amount on Form 6E, under Account 3000 (Total Employee Benefits).

Books, Supplies, and Replacement Equipment

Usually books are provided on a per-student basis. Since the district enrollment would not change under expanded TCS, we assume that it would not be necessary to purchase additional books.

If new schools are required under expanded TCS, more instructional/media materials would probably be required; the materials and costs can be estimated from the inventory at existing comparable schools. Enter the estimated costs on Form 6E, under Accounts 4300-4500.*

The placement of new schools could reduce the population eligible for transportation, causing all transportation-related costs to diminish. The critical considerations are:

---

*If new classrooms would be added to existing schools, the entries on Form 6E should reflect the difference between the estimated cost under expanded TCS and the actual current cost.

- How many buses would be needed? If there would be fewer buses under expanded TCS, there would be fewer drivers, and equipment replacement costs would decrease.
- How many miles would be driven? If fewer miles would be driven, then expenses for gasoline, maintenance supplies, and transportation personnel would decrease.

It may be the case, however, that more buses would need to be purchased under expanded TCS, since more children would be transported during a given week. In this case, transportation costs would increase.

Enter the amount of the cost increase or decrease on Form 6E, under Account 4600 (Transportation Supplies). (Note: If costs for transportation decrease under expanded TCS, this entry will be negative.)

If new schools are required, food services costs can be estimated on the basis of costs at comparable schools. Enter the amount on Form 6E, under Account 4700.

Contracted Services

Costs for insurance will increase if new schools or classrooms are built. The incremental expense can be estimated by either of the following:

- Obtaining the insurance rates for comparable schools.
- Dividing the total district insurance cost by the number of schools in the district to obtain an average per-school cost. Multiplying this average by the number of new schools needed yields an estimate of the additional cost.

Enter the estimated cost of insurance on Form 6E, under Account 5400.

When new schools are required, their utilities cost can be estimated by examining the records of comparable schools. If additional classrooms are required at an existing YRS school, follow this procedure:

(1) Obtain the estimated utilities cost for the school under TCS (without the additional classrooms). This figure is found on Line 2 of Form 11.

(2) Divide this cost by the number of existing classrooms to obtain the annual per-classroom cost for utilities.

(3) Multiply the per-classroom cost by the number of new classrooms needed. The result is the simulated incremental utilities expense.

The total incremental utilities expense for all schools should be entered on Form 6E, under Account 5500 (Utilities).

Summarizing the Additional Operating Costs for New Schools or Classrooms (Form 6E)

Add the line-item entries on Form 6E to obtain subtotals for each account category. Enter the resulting subtotals in Column 7 of Form 5. Entries in Column 7 represent the operating costs associated with the additional schools or classrooms that would be needed to house all students in the district adequately under the traditional calendar.

Estimating the Cost of Mandatory Services Under the Expanded TCS Program (Form 5, Column 8)

On Form 5, add Column 6 (core operating costs) to Column 7 to obtain the total operating costs for mandatory services under TCS. Enter the results in Column 8. Column 8 entries represent the costs of providing services required by law if all schools operated under a traditional calendar. These costs may be compared with costs shown in Column 4, which represent actual district expenditures (with one or more schools operating under a year-round calendar) for the same services.

Estimating the Cost of Summer Session Under the Expanded TCS Program (Form 5, Column 9)

To compare total district expenditures under the two calendars, costs for summer school should be added to the costs of mandatory services. The actual costs of summer session and intersession programs appear in Columns 2 and 3 of Form 5. Under the expanded TCS program, intersession programs would not be conducted, but summer school would presumably be expanded.

We recommend using the cost of the district's current summer session and the ratio of total district enrollment to enrollment served by the current summer program as a basis for estimating the costs of the

expanded summer program. To derive the estimated costs, divide the total district enrollment by the number of students currently enrolled in traditional-calendar programs. Multiply the resulting factor by the current summer school costs (Form 5, Column 3). Enter the resulting costs on Form 5, Column 9. An example is shown below.

- If the total district enrollment is 1,500, and the TCS enrollment is 1,000, multiply actual summer school costs by 1.5. Thus, if Account 1000 in Column 3 of Form 5 is $5,000, the estimated cost of salaries for uncertificated personnel in the expanded summer school program is $5,000 × 1.5, or $7,500.

Estimating Total District Expenditures Under the Expanded TCS Program (Form 5, Column 10)

To determine total district expenditures under the expanded TCS program, add entries in Column 8 (mandatory services) to summer school costs (Column 9). Enter the results in Column 10.

Summary--Comparing Actual Costs Under YRS with Simulated Costs Under the Expanded TCS Program

Once Form 5 has been completed, it is possible to make comparisons between actual operating costs with the year-round school program and simulated costs without the year-round program. Comparing Column 4 entries with entries in Column 8 reveals differences in operating costs for services required by law under the two schedules. If Column 4 entries are less than entries in Column 8, the year-round program represents a saving to the district. Where Column 4 entries exceed those in Column 8, on the other hand, the costs of operating a year-round program are higher than the costs of serving all students under the expanded traditional-calendar program. Similar comparisons can be made between Columns 1 and 10.

An example of a completed Form 5 is shown in Figure 3-17. Comparing Column 4 with Column 8, we see that costs are lower under YRS for Certificated Salaries (Account 1000) and Benefits (Account 3000). Although YRS costs are somewhat higher in other categories, the totals under Columns 4 and 8 show an overall saving of almost $30,000 for YRS. Comparing total expenditures under the two calendars (Column 1 and Column 10), we see a saving of almost $35,000 under YRS.

Accounting Category	(1) Actual District Expenditures	(2) Actual Costs for Inter-Session	(3) Actual Costs for Summer Session	(4) Actual Costs for Mandatory Services (C1-C2-C3)	(5) YRS Incremental Operating Costs	(6) Core Operating Costs (C4-C5)	(7) Estimated Costs for Addl Schools & Classrooms Under Expanded TCS	(8) Estimated Costs for Mandatory Services under Expanded TCS (C6+C7)	(9) Estimated Costs for Summer School Under Expanded TCS	(10) Estimated District Expenditures Under Expanded TCS (C8+C9)
1000 Certificated Salaries	10,075,459.0	43,267.55	102,030.4	9,930,161.05	1,969.60	9,928,191.45	46,565.94	9,974,757.39	145,258.69	10,120,016.08
2000 Classified Salaries	3,150,740.0	7,969.19	1,931.99	3,140,838.82	26,422.65	3,114,416.17	18,092.61	3,132,508.78	2,750.78	3,135,259.56
3000 Employee Benefits	1,890,114.0	--	--	1,890,114.0	11,713.0	1,878,400.99	21,357.04	1,899,758.03	--	1,899,758.03
4000 Books, Supplies and Equipment Replacement	1,163,806.0	5,274.27	30,908.94	1,127,622.79	12,042	1,115,580.79	--	1,115,580.79	44,005.17	1,159,585.96
5000 Contracted Services	737,541.0	52.34	10,858.00	726,630.66	10,394.02	716,236.64	10,021.75	726,258.39	15,459.10	741,717.49
6000 Sites, Building	222,022.0	195.04	--	221,826.96	--	221,826.96	--	221,826.96	--	221,826.96
7000 Other Outgo	1,008,767.0	--	--	1,008,767.0	4,076	1,004,691.00	--	1,004,691	--	1,004,891
TOTAL	18,248,449.0	56,758.39	145,729.33	18,045,961.28	66,617.28	17,979,344.0	96,037.34	18,075,381.34	207,473.74	18,282,885.03

FIGURE 3-17 EXAMPLE OF COMPLETED FORM 5

4 TRANSITION COSTS

In Chapter 2, we described a procedure for estimating capital costs avoided by conversion to a year-round schedule. In Chapter 3, we focused on comparing district operating costs with and without a year-round program. In this chapter, we discuss the third and final category of costs included in in the SR1 model--transition costs. As the term suggests, transition costs are incremental costs directly attributable to the conversion to a year-round schedule in one or more schools. That is, they are costs that would not be incurred if the district remained on a traditional 9-month calendar.

Transition costs represent a special category of capital costs; we have separated them from the construction costs discussed in Chapter 2 primarily because they are costs incurred in the conversion to a year-round program rather than costs avoided. Transition costs are distinguished from YRS incremental operating costs (identified in Chapter 3; see pp. 36-59) by their nonrecurring nature. For example, purchase and installation of air-conditioning equipment is considered a transition cost. Utilities expenses for using the equipment are treated as incremental operating costs.

Our model includes five categories of transition costs:

- Planning--costs associated with reviewing YRS programs in other school systems, developing a year-round program, and publicizing the new program to the community.
- In-service training--costs for training school staff affected by the year-round program.
- Instructional/curriculum materials and supplies--costs for purchasing materials specifically required by the year-round program, for example, materials purchased for use in intersession programs.
- Evaluation--costs specifically associated with evaluation of the impacts of the year-round program on students, teachers, parents, and community, and costs of analyzing budgetary impacts of the program.

- Capital outlay--costs of purchasing and installing equipment specifically required by the YRS program (e.g., air conditioning, lockers to store teachers' materials during intersessions).

For districts that have already adopted a year-round program in one or more schools, the basic information needed to calculate transition costs should be available in district records. The primary guideline for identifying transition costs is that they are actual expenditures of district funds that would not have been incurred without the year-round program. For example, if one edition of a regularly published district newsletter is devoted to publicizing the year-round schedule, the cost of the newsletter should not be treated as a transition cost (because the newsletter would have been published anyway). As another example, if a school principal attends a YRS planning meeting, using time available under his/her contract, this is not a distinct transition cost. (An opportunity cost is involved, but we do not include such factors in our calculations.) However, if the principal is paid extra for attending the meeting, the extra pay should be included in the calculation of transition expense.

Determining Total Transition Costs (Form 12)

The process for calculating the overall cost of transition uses Form 12 (District Worksheet for Calculating Transition Costs), shown in Figure 4-1. Entries on Form 12 should represent actual expenditures from district funds for distinct transition costs. Within the categories shown on Form 12, costs may be incurred for salaries of district personnel, travel, use of outside consultants, purchase of materials, and so on. All such costs should be included in Form 12, provided that they were a direct result of the conversion to the year-round calendar and they were paid for out of the district's general fund.

Form 12 includes types of transition costs most often incurred by districts that have converted to year-round calendars. Obviously, not all districts incur costs in every category; only costs actually incurred or provided for in the district budget should be reported. A brief discussion of each cost category follows:

FORM 12 DISTRICT WORKSHEET FOR CALCULATING TRANSITION COSTS

(1) PLANNING $_____

a. Research _____
b. Consultant services _____
c. Policy development _____
d. Information systems development _____
e. Community relations _____
f. Other _____ _____

(2) IN-SERVICE TRAINING $_____

a. Substitutes _____
b. Consultant services _____
c. Problem-solving committee _____
d. Other _____ _____

(3) INSTRUCTIONAL/CURRICULUM MATERIALS AND SUPPLIES $_____

(4) EVALUATION $_____

a. Student achievement _____
b. Surveys _____
c. Consultant services _____
d. Evaluation reports _____
e. Other _____ _____

(5) CAPITAL OUTLAY $_____

a. Air conditioning _____
b. Equipment _____
c. Attendance cards/materials _____
d. Other _____

TOTAL $_____

FIGURE 4-1 FORM 12

(1) Planning. Basically this category includes expenses incurred in the course of considering whether to adopt a year-round calendar and in developing a plan for implementation of the new calendar. Districts considering adoption of a year-round calendar usually undertake research on the experiences of other districts that have implemented YRS programs; often this involves visits to one or more districts using YRS. Sometimes consultants are hired to assist in development of a program suited to local needs and conditions. There may be additional costs associated with review and development of district policies regarding contract extensions and other administrative matters affected by a change in the school calendar. Most districts have incurred costs in developing information systems to handle the complexities of scheduling students and teachers in multiple attendance groups or tracks. Finally, many districts have undertaken community relations activities to inform parents, youth groups, local businesses, and other groups of how the new schedule may affect them.

Enter personnel and other costs (travel, materials, etc.) associated with the planning activities described above on Lines 1a through 1e. Any other costs associated with planning should be reported on Line 1f. Add costs shown on Lines 1a-1f, and enter the resulting subtotal on Line 1.

(2) In-Service Training. Included within this category are costs associated with preparing school staff affected by the YRS program. When special training sessions or teachers' meetings are held during regular school hours, costs are incurred for purchase of substitutes (i.e., release time). If special training sessions are held (e.g., for teachers participating in intersession programs), there may be costs for training consultants. Special costs may also be incurred by parent/teacher/administrator problem-solving committees formed to facilitate the transition to YRS.

Enter distinct transition costs for personnel and other resources associated with in-service activities on Lines 2a-2d, as appropriate. Enter the subtotal for in-service costs on Line 2.

(3) Instructional/Curriculum Materials and Supplies. Enter on Line 3 the cost of any instructional materials purchased as a direct result of the introduction of YRS (i.e., materials that would not otherwise have been purchased, such as intersession supplies).

(4) Evaluation. Most districts that have adopted year-round calendars have undertaken some study of the program's impact. One area frequently studied is student achievement; costs may be incurred for purchase, administration, and scoring of student tests. (Important note: Do not include costs of student

testing programs that are undertaken as part of standard district operations. Include testing costs only if testing programs were conducted specifically because the year-round program had been introduced.) There may also be costs for development, distribution, and processing of staff, parent, or community surveys designed to measure local attitudes about the program. Where consultants were hired to perform evaluation activities, costs for their services should be included. Finally, costs incurred in the preparation, printing, and distribution of YRS evaluation reports should be determined.

Enter actual evaluation costs in Lines 4a-4e, and overall evaluation costs on Line 4.

(5) Capital Outlay. Many districts have purchased equipment specifically needed to operate under a year-round calendar. For example, it has sometimes been necessary to install air-conditioning systems to keep schools open during the summer months. Also, some districts have purchased equipment such as portable lockers in which to store teachers' supplies and materials during intersessions.

Enter actual costs for equipment and other capital outlays on Lines 5a-5d. Sum these costs, and enter the subtotal on Line 5.

Sum the subtotals reported on Lines 1-5 to derive the total transition cost. An example of a completed Form 12 is shown in Figure 4-2.

Determining Annualized Transition Costs (Form 4B)

The total cost of transition to the year-round calendar should be amortized over the same period that costs for new schools or classrooms "avoided" by YRS were amortized in Chapter 2. This operation yields an annualized cost figure that can be included, with the annualized capital and operating cost figures derived in Chapters 2 and 3, in the overall analysis of YRS costs.

The amortization process uses Form 4B (District Worksheet for Calculating Annualized Transition Costs), shown in Figure 4-3. Form 4B is basically a simpler version of Form 4A (District Worksheet for Calculating Annual Capital Cost "Avoided" by YRS), which was shown in Chapter 2. To complete Form 4B, perform the following steps:

(1) Enter the total transition costs (from Form 12) on Line 1.

FORM 12 DISTRICT WORKSHEET FOR CALCULATING TRANSITION COSTS

(1)	PLANNING		$ 4,176.67
	a. Research	$2,882.82	
	b. Consultant services	183.00	
	c. Policy development	0	
	d. Information systems development	260.73	
	e. Community relations	850.12	
	f. Other _____	0	
(2)	IN-SERVICE TRAINING		$ 757.60
	a. Substitutes	578.00	
	b. Consultant services	150.00	
	c. Problem-solving committee	29.60	
	d. Other _____	0	
(3)	INSTRUCTIONAL/CURRICULUM MATERIALS AND SUPPLIES		$ 0
(4)	EVALUATION		$ 2,283.31
	a. Student achievement	1,652.41	
	b. Surveys	630.90	
	c. Consultant services	0	
	d. Evaluation reports	0	
	e. Other _____	0	
(5)	CAPITAL OUTLAY		$ 2,262.11
	a. Air conditioning	0	
	b. Equipment	1,841.98	
	c. Attendance cards/materials	420.18	
	d. Other _____	0	
		TOTAL	$ 9,479.69

FIGURE 4-2 EXAMPLE OF COMPLETED FORM 12

FORM 4B DISTRICT WORKSHEET FOR CALCULATING ANNUALIZED TRANSITION COSTS

(1) TOTAL TRANSITION COSTS (from Form 12) $_____

(2) ANNUALIZED TRANSITION COST

a. Bond life (from Form 4A, Line 4a) _____

b. Bond interest rate (from Form 4A, Line 4b) _____

c. Present value (from Form 4A, Line 4c) _____

d. Annualized cost (Line 1 ÷ Line 2c) $_____

(3) TOTAL PAYOUT (Line 2a × Line 2d) $_____

(4) TOTAL INTEREST (Line 3 - Line 1) $_____

FIGURE 4-3 FORM 4B

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(2) Enter the bond life, interest rates, and present value on Lines 2a-2c. Use the figures from Lines 4a-4c on Form 4A (see p. 23).

(3) Divide Line 1 (total cost) by Line 2c (present value) to derive the annualized cost associated with the transition to a year-round calendar. Enter the annualized cost on Line 2d.

(4) Although the annualized cost (Line 2d) is the figure that will be used in the Chapter 5 summary analysis, the total payout associated with transition costs can be derived by multiplying Line 2a (bond life) by Line 2d (annualized cost). Enter the resulting figure on Line 3.

(5) The total interest paid to finance transition costs* can be obtained by subtracting Line 1 (transition cost) from Line 3 (total payout). Enter the resulting figure on Line 4.

(1)	TOTAL TRANSITION COSTS (from Form 12)	$ 9,479.69	
(2)	ANNUALIZED TRANSITION COST		
	a. Bond life (from Form 4A, Line 4a)	20 years	
	b. Bond interest rate (from Form 4a, Line 4b)	6%	
	c. Present value (from Form 4A, Line 4c)	11.470	
	d. Annualized cost (Line 1 ÷ Line 2c)		$ 826.48
(3)	TOTAL PAYOUT (Line 2a × Line 2d)	$ 16,529.60	
(4)	TOTAL INTEREST (Line 3 - Line 1)	$ 7,049.91	

*In some circumstances, the amount may be small enough that no interest would be charged.

5 SUMMARY OF YRS/TCS COMPARISON

In this concluding chapter we describe the procedure for determining the overall impact of the year-round calendar on the district budget. This procedure makes use of the information developed in Chapters 2, 3, and 4 concerning capital costs, operating expenses, and transition costs. Basically, our model calls for calculating the difference between the estimated costs "avoided" by the conversion to the year-round schedule and the actual incremental costs incurred under the year-round calendar. If this difference is positive, the year-round program represents a savings to the district. If the difference is negative, then the YRS program has cost more than the simulated expansion of the traditional 9-month program.

The method for determining the overall cost impact uses Form 13 (YRS/TCS Cost Summary), shown in Figure 5-1. Our summary analysis uses annual cost figures developed in the previous chapters; as such, Form 13 yields the annual savings (or excess cost) realized by the YRS program.

We assume that most districts will include total capital costs "avoided" as well as total transition costs in reporting results of their cost analyses. However, for purposes of combining capital costs, operating expenses, and transition costs, we have chosen to use annual cost figures because: (1) all costs must be reckoned over the same time period and there is no sound basis for predicting changes in operating expenses of extended future periods, and (2) we assume most districts are interested in determining YRS impacts on their annual budgets.

To derive the overall annual figure, complete Form 13 as follows:

(1) Enter the annual capital cost "avoided" (from Form 4A, Line 4d).

(2) Enter on Line 2a the operating cost for mandatory services under YRS; this is the total under Column 4 of Form 5. Enter on Line 2b the operating cost for mandatory services under expanded TCS; this is the total under Column 8 of Form 5.

FORM 13 YRS/TCS COST SUMMARY

(1) ANNUAL CAPITAL COST "AVOIDED" UNDER YRS $_____
(From Form 4A, Line 4d)

(2) ANNUAL OPERATING COSTS

a. Under YRS $_____
(Form 5, Column 4)

b. Under Expanded TCS $_____
(Form 5, Column 8)

c. "Excess" Costs under YRS _____
(Line 2a - Line 2b)

(3) ANNUAL COST OF TRANSITION _____
(Form 4B, Line 2d)

(4) NET SAVING (COST) UNDER YRS $_____
(Line 1 - Line 2c - Line 3)

FIGURE 5-1 FORM 13

(3) Subtract Line 2b from Line 2a, and enter the resulting figure on Line 2c. If operating costs under expanded TCS are greater than costs under YRS, Line 2c will be a negative number. If costs are higher under YRS, Line 2c will be a positive number.

(4) Enter the annualized transition cost (from Form 12, Line 2d) on Line 3.

(5) Subtract Lines 2c* and 3 from Line 1 to yield the net annual saving. Enter this figure on Line 4. Line 4 represents the difference between annual costs "avoided" under YRS and annual incremental costs incurred. If Line 4 is positive, the YRS program costs less than the simulated expansion of the traditional program. If Line 4 is negative, the YRS program costs more.

Three examples are shown below:

- Example 1. In this first example, operating costs are higher under YRS. However, the annual capital costs "avoided" by the year-round use of existing facilities are sufficiently large that the YRS program represents an annual saving of $45,000.

(1)	ANNUAL CAPITAL COST "AVOIDED" UNDER YRS (From Form 4A, Line 4d)		$ 100,000
(2)	ANNUAL OPERATING COSTS		
	a. Under YRS (Form 5, Column 4)	$ 15,000,000	
	b. Under Expanded TCS (Form 5, Column 8)	$ 14,950,000	
	c. "Excess" Costs under YRS (Line 2a - Line 2b)		50,000
(3)	ANNUAL COST OF TRANSITION (Form 4B, Line 2d)		5,000
(4)	NET SAVING (COST) UNDER YRS (Line 1 - Line 2c - Line 3)		$ 45,000

*If Line 2c is negative (i.e., operating costs are higher under expanded TCS), its absolute value should be added to the absolute value of Line 1. Line 3 is subtracted from the result to determine the net saving. See Example 2 on p. 84.

- Example 2. This example uses figures from the sample Forms 4, 5, and 12 shown in the previous chapters. Operating costs are lower under YRS. The overall annual saving to the district is $153,323.40.

(1)	ANNUAL CAPITAL COST "AVOIDED" UNDER YRS (From Form 4A, Line 4d)		$ 124,729.82
(2)	ANNUAL OPERATING COSTS		
	a. Under YRS (Form 5, Column 4)	$ 18,045,961.28	
	b. Under Expanded TCS (Form 5, Column 8)	$ 18,075,381.34	
	c. "Excess" Costs under YRS (Line 2a - Line 2b)		- 29,420.06
(3)	ANNUAL COST OF TRANSITION (Form 4B, Line 2d)		826.48
(4)	NET SAVING (COST) UNDER YRS (Line 1 - Line 2c - Line 3)		$ 153,323.40

- Example 3. In the third example, operating costs are higher under YRS. Although $50,000 per year of capital costs are "avoided," the combined incremental operating costs and transition expense makes the district's YRS program more expensive than the simulated expansion of TCS.

(1)	ANNUAL CAPITAL COST "AVOIDED" UNDER YRS (From Form 4A, Line 4d)		$ 50,000
(2)	ANNUAL OPERATING COSTS		
	a. Under YRS (Form 5, Column 4)	$ 10,000,000	
	b. Under Expanded TCS (Form 5, Column 8)	$ 9,930,000	
	c. "Excess" Costs under YRS (Line 2a - Line 2b)		70,000
(3)	ANNUAL COST OF TRANSITION (Form 4B, Line 2d)		2,000
(4)	NET SAVING (COST) UNDER YRS (Line 1 - Line 2c - Line 3)		$ (22,000)

Appendix A

AN ABBREVIATED VERSION OF THE SRI COST ANALYSIS MODEL

In some cases an LEA may wish to conduct a quick study of the cost impact of a YRS program. Such a brief study can provide significant information for a district either considering going to a year-round schedule or desiring a quick analysis of the cost of reverting back to an exclusive TCS program.

This appendix provides a shortened version of the evaluation procedure presented in Chapters 1 through 5. This procedure includes the cost components that our experience indicates are critical to the cost determination.

Capital Costs

(1) Determine the number of new classrooms needed if the school/LEA reverted to a single-session traditional schedule.

  (a) Count the number of regular classrooms in each school.

  (b) Subtract the number of regular classrooms being used for specialized functions (library, media rooms, special education, resource rooms, etc.).

  (c) Multiply the number of remaining classrooms by the district's staffing ratio to determine capacity.

  (d) Compare the capacity figure with the district's planning enrollment. (Our definition of planning enrollment is the high point in the previous year's enrollment. Note: If YRS is to be considered, use the enrollment the district expects to handle within the next few years.)

  (e) If the district's planning enrollment is greater than its capacity, divide the difference by the staffing ratio to determine the additional classrooms needed.

(2) Determine the construction cost per classroom--use Form 3, "District Worksheet for Construction of New Classrooms" (or Form 2, "District Worksheet for Development of New Schools").

- Calculate the size of each new classroom.
- Estimate construction cost per square foot.

- Multiply total square feet required by cost per square foot to determine avoided construction costs.

(3) Determine the annual avoided capital costs--use Form 4A, "District Worksheet for Calculation of Annual Capital Cost."

- Calculate development cost, including construction and land acquisition.
- Calculate total payout by bond life to determine annual avoided capital cost.

Operating Costs

Teacher Compensation

This includes salaries and benefits for all classroom and support service teachers.* We are interested in (a) the total cost under TCS versus (b) the total cost under YRS, holding enrollment and educational services constant.

- If teachers do not extend their contracts, there will be no difference between a and b.
- If some teachers are allowed to extend their contracts, data must be collected on the length of the extension and the daily rate for these teachers. Use Form 7A, "Worksheet for Calculating Actual Costs of Teacher Contract Extensions," and:
  - (a) List all teachers who extend, the length of their extension in days, and their daily rate.
  - (b) Multiply each teacher's daily rate by the number of days extended.
  - (c) Sum the salary cost for the extensions listed.
  - (d) Apply the benefit rates to the sum of the salaries to determine the cost of benefits. (Check to be sure that benefits are paid on extensions. Many districts do not do this.)
  - (e) Add the cost of benefits to the salary costs.

To determine the cost of maintaining the same number of teaching days in the district on a TCS calendar, use Form 7B, "Worksheet for Comparing Teacher Salaries Under YRS and Expanded TCS."

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*And instructional aides, if any.

(a) Determine the number of new teachers that would be needed to cover the extension days.

(b) Determine the daily rate for each new teacher.

(c) Multiply each teacher's daily rate by the number of days he or she would work.

(d) Add up the salary costs for these teaching days.

(e) Multiply the salary costs by the various benefit rates to determine the cost of benefits.

(f) Add the cost of benefits to the salary cost.

Nonteacher Compensation

This category includes salaries and benefits for all school personnel other than classroom teachers. Use Forms 8A and 9A to calculate YRS incremental costs for other certificated and classified personnel and apply the same procedures outlined for teacher compensation. Watch for extensions on the following types of personnel:

- Principals
- Clerical support
- Librarians or library aides
- Nurses or nurse's aides
- Psychologist
- Transportation personnel
- Noon supervisors.

Our experience has indicated that only a few districts have had extensions for guidance counselors and supervisory or maintenance personnel. In addition to salary extensions, the cost for substitutes must be considered. Substitutes are often recruited for principals and for transportation and maintenance personnel. To determine these costs, multiply the number of days for which a substitute is required by the substitute's daily rate. Substitutes do not generally receive benefits, so there should not be additional costs above the salaries. Some districts will create new administrative positions on a YRS calendar. For example, the district may have a part-time clerk to help with additional registration and attendance paperwork or a part-time intersession director. These types of costs should be added on Forms 8A and 9A.

Use Forms 8B and 9B for the corresponding TCS incremental costs. These two forms will generally be needed only if one of two things occurs:

(a) A new school is to be built.

(b) New buses must be purchased and operated.

If a new school is built, it will need to be staffed to a level comparable with other district schools. Our experience shows the following positions would need to be filled:

- Principal
- Clerical support (one or more)
- Librarian or library aide
- Nurse or nurse's aide
- Maintenance and operations
- Noon supervisor.

Transportation

A YRS program generally means that buses are in operation more days of the year. To determine the incremental cost of YRS transportation, multiply the cost of operating a bus for a day* by the total number of additional days all buses are in operation.

For districts considering a YRS program, the YRS simulation will need to determine two things: Will the district allow the bus runs to be extended? Does the district's transportation coordinator have the time and resources to completely reorganize the system? If both answers are affirmative, the district can accommodate its bused population on three-quarters of the equipment currently in use. (If the answer is no to either question, the district will not be able to expand the capacity of its equipment, and therefore should only add the cost of the additional days buses are in service.)

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*The daily rate can generally be calculated from information reported to the state. Look for the annual expenditure on transportation supplies. Divide this by the total number of operating days for all buses.

To calculate the comparable TCS figure, the district must determine if its existing runs could accommodate all students attending school at the same time. If there is room, then there will be no incremental costs for a TCS program. If there is not enough room, then the district will have to purchase one or more buses and add the cost of daily operations--salaries, benefits, supplies, and insurance.

Utilities

We are comparing the cost under YRS with the cost under TCS serving the same enrollment (this probably means adding classrooms under TCS). Use Form 11, "Worksheet for Calculating Incremental Utilities Cost," Lines 1 and 2.

The utility costs incurred from September to June would be incurred on either the TCS or the YRS program. The utility costs unique to YRS are a portion of the gas and electric charges* incurred during July and August. The additional gas expenditure for the summer months is generally minimal--about 25%, but the electrical consumption is substantially increased. In our experience with California schools, during summer 1976 the utilization of electricity went up 65%. These figures would be drastically altered for schools that are air conditioned. In this case, to simulate a TCS program, try to locate two comparable schools, one YRS and one TCS, and contrast the utility expenses.

To revert to a TCS program, additional costs would be incurred only if new schools are built. If this is the case, use the utility expense records for a school of approximately the same size.

Transition Costs

Use Form 12, "District Worksheet for Calculating Transition Costs," and Form 4B, "District Worksheet for Calculating Annualized Transition Costs."

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*It should be noted that water costs would generally be incurred independently of the school calendar; lawns need to be watered during the summer on any school calendar.

Total Cost Summary

Use Form 14, "Detailed YRS/TCS Cost Summary," to compute the savings from the year-round program. This form is shown in Figure A-1.

FORM 14 DETAILED YRS/TCS COST SUMMARY

		YRS	TCS
(1)	ANNUAL CAPITAL COST "AVOIDED' UNDER YRS (from Form 4A, Line 4d)		$____
(2)	ANNUAL OPERATING COSTS		
	a. Teacher compensation	$ (Form 7A)	$ (Form 7B)
	b. Nonteacher compensation	(Forms 8A and 9A)	(Forms 8B and 9B)
	c. Transportation	(Form 10)	(calculation)
	d. Utilities	(Line 1, Form 11)	(Line 2, Form 11)
	e. Total		
	f. Saving (cost) under YRS (TCS line e - YRS line e)		
(3)	ANNUAL TRANSITION COST (from Form 4B, Line 2d)		( )
(4)	NET SAVING (COST) UNDER YRS		$

FIGURE A-1 FORM 14

Appendix B

REFERENCE TABLES

Table B-1

SQUARE FOOTAGE ALLOWANCES IN CALIFORNIA

In California the maximum allowed per pupil (for purposes of computation of state aid) is

K - 6 55 square feet
7 - 8 75 square feet
9 - 12 see below

High School Attendance		Maximum Number of Square Feet of Building Area
1-50	18,000	
51-100	18,000	plus 162 for each pupil over 50
101-200	26,100	plus 99 for each pupil over 100
201-300	36,000	plus 60 for each pupil over 200
301-600	42,000	plus 54 for each pupil over 300
601-1,800	58,200	plus 80 for each pupil over 600
Over 1,800	154,200	plus 85 for each pupil over 1,800

Table B-2

DETERMINATION OF CONSTRUCTION COSTS PER SQUARE FOOT

(1) Obtain the base allowance per square foot from a schedule of school construction unit costs. For example:

- Kindergarten classrooms $39.70
- Elementary classrooms 37.10
- High school and intermediate 36.80

(2) Multiply the total in (1) by a geographic adjustment factor (Table A-3). For example, in Santa Cruz County (SE) the adjustment factor is 1.05; $36.80 × 1.05 = $38.64.

(3) Multiply the total from (2) by a cost index adjustment factor (Table A-4). For example, the adjustment factor for August 1975 was 1.05; $38.64 × 1.05 = $40.58.

(4) Multiply the total from (3) by a small building area multiplier (Table A-5). For example, for an addition of 9,750 square feet, the multiplier is 1.03; $40.58 × 1.03 = $41.80.

(5) This figure does not include miscellaneous construction costs. These include: site development, plans, furniture and equipment, utilities, and reconstruction. In fiscal year 1974-75, these averaged 36% of the actual building cost, therefore the multiplier is 1.36; $41.80 × 1.36 = $56.83.

Table B-3

CALIFORNIA GEOGPAPHIC ADJUSTMENT FACTORS
TO BASE SCHEDULE OF UNIT COSTS
(State School Building Aid)

County, Area	Adjustment Factor	County, Area	Adjustment Factor
Alameda	1.05	Kings, Eastern	1.00
Alpine	1.10	Kings, Western	1.05
Amador, Western Part	1.05	Lake	1.10
Amador, Eastern Part	1.10	Lassen, Northern Part	1.20
Butte, Western Part	1.05	Lassen, Southern Part	1.15
Butte, Eastern Part	1.10	Los Angeles, N.E. Part	1.05
Calaveras, Western Part	1.05	Los Angeles, S.W. Part	1.00
Calaveras, Eastern Part	1.10	Madera, Western	1.00
Colusa	1.05	Madera, Central	1.10
Contra Costa	1.05	Madera, Eastern	1.10
Del Norte	1.10	Marin	1.05
El Dorado, Western Part	1.05	Mariposa, Western Part	1.05
El Dorado, Eastern Part	1.10	Mariposa, Eastern Part	1.10
Fresno, Central	1.00	Mendocino, S. Redwd. Hwy Area	1.05
Fresno, Western Part and Eastern Foothills	1.05	Mendocino, N. Redwd. Hwy Area	1.10
Fresno, Eastern Mountainous	1.10		
Glenn, Eastern Part	1.05	Mendocino, Ft. Bragg Area	1.15
Glenn, Western Part	1.10	Mendocino, Residual	1.15
Humboldt, Eureka Area	1.05	Merced	1.00
Humboldt, Redwd. Hwy Area	1.10	Modoc, Northeastern Part	1.20
Humboldt, Hwy 299 & Vicinity	1.10	Modoc, except N.E. Part	1.20
Humboldt, S.E. Part	1.20	Mono	1.25
Humboldt, Residual Area	1.15	Monterey, Northern Part	1.05
Imperial, Imperial Valley	1.05	Monterey, Southern Part	1.10
Imperial, Exc. above	1.10	Napa	1.05
Inyo, S.E. Part	1.25	Nevada	1.10
Inyo, Exc. S.E. Part	1.10	Orange	1.00
Kern, Central Valley	1.00	Placer, S.W.	1.00
Kern, Western, Southern and Foothills	1.05	Placer, Central	1.05
Kern, Eastern	1.10	Placer, N.E.	1.10
		Plumas	1.10

Table B-3 (concluded)

County, Area	Adjustment Factor	County, Area	Adjustment Factor
Riverside, N.W.	1.00	Tehama, ex. Valley Area	1.10
Riverside, Eastern	1.10	Trinity	1.10
Riverside, ex. above	1.05	Tulare, Western	1.00
Sacramento	1.00	Tulare, Central	1.05
San Benito, Northern	1.05	Tulare, Eastern	1.10
San Benito, Southern	1.10	Tuolumne, Western	1.05
San Bernardino, N.E.	1.10	Tuolumne, Eastern	1.10
San Bernardino, S.W.	1.00	Ventura, Southern	1.00
San Bernardino, ex. above	1.05	Ventura, Northern	1.05
San Diego, Western	1.00	Yolo, Eastern	1.00
San Diego, N.E.	1.15	Yolo, Western	1.05
San Diego, Central	1.05	Yuba, S.W. Part	1.05
San Francisco	1.05	Yuba, N.E.	1.10
San Joaquin	1.00		
San Luis Obispo	1.05		
San Mateo, S.W.	1.10		
San Mateo, Metro. Area	1.05		
Santa Barbara, Northern	1.05		
Santa Barbara, Southern	1.00		
Santa Clara	1.05		
Santa Cruz, N.W.	1.10		
Santa Cruz, S.E.	1.05		
Shasta, Valley Area	1.05		
Shasta, ex. Valley Area	1.10		
Sierra	1.10		
Siskiyou, Somes Bar Area	1.25		
Siskiyou, Salmon River Area	1.30		
Siskiyou, Western Part	1.20		
Siskiyou, Yreka & Residual	1.10		
Solano	1.05		
Sonoma, N.W.	1.10		
Sonama, ex. above	1.05		
Stanislaus	1.00		
Sutter	1.05		
Tehama, Valley Area	1.05		

Table B-4

CALIFORNIA COST INDEX ADJUSTMENT FACTORS

	Metropolitan Cost Group	Factor
January, 1953	3	
March, 1954	2	
June, 1955	2 + 3%	
September, 1955	3	
March, 1956	4	
March, 1958	3	
September, 1958	4	
June, 1959	5	
January, 1963	6	
December 8, 1964	7	
October 12, 1965	7 x 1.01	
April 12, 1966	7 x 1.02	
May 10, 1966	7 x 1.03	
June 14, 1966	7 x 1.04	
August 9, 1966	7 x 1.05	
September 13, 1966	7 x 1.06	
November 16, 1966	7 x 1.07	
January 10, 1967	7 x 1.06	
May 10, 1967	7 x 1.07	
July 12, 1967	7 x 1.08	
August 9, 1967	7 x 1.09	
September 13, 1967	7 x 1.10	
December 13, 1967	7 x 1.11	
January 10, 1968	7 x 1.10	
March 13, 1968	7 x 1.11	
May 8, 1968	7 x 1.12	
July 10, 1968	7 x 1.14	
September 11, 1968	7 x 1.16	
October 9, 1968	7 x 1.18	
December 11, 1968	7 x 1.19	
February 11, 1969	7 x 1.20	
March 13, 1969	7 x 1.21	
April 11, 1969	7 x 1.22	
May 9, 1969	7 x 1.23	
June 13, 1969	7 x 1.24	
August 7, 1969	7 x 1.23	
November 12, 1969	7 x 1.24	
December 12, 1969	7 x 1.25	
February 9, 1970	7 x 1.26	
June 9, 1970		1.27
August 11, 1970		1.28
September 15, 1970		1.29
November 10, 1970		1.29
January 14, 1971		1.33
March 18, 1971		1.34
May 20, 1971, the Board adopted new base		
September 15, 1971		1.03
October 21, 1971		1.04
November 18, 1971		1.05
December 15, 1971		1.04
January 20, 1972		1.05
February 24, 1972		1.06
March 16, 1972		1.07
April 20, 1972		1.08
June 15, 1972		1.09
July 20, 1972		1.10
August 10, 1972		1.11
September 21, 1972		1.12
October 24, 1972		1.14
December 21, 1972		1.15
January 18, 1973		1.16
February 15, 1973		1.17
March 15, 1973		1.18
April 24, 1973		1.19
May 15, 1973		1.20
June 19, 1973		1.22
July 17, 1973		1.23
September 18, 1973		1.24
November 1, 1973		1.25
December 18, 1973, Board adopted new base to be effective November 1, 1973. New Base = 1.375		
March 19, 1974		1.01
May 21, 1974		1.02
June 18, 1974		1.03
July 16, 1974		1.04
(temporary additional 7% increase to be effective for 90 days beginning 5-30-74)		
August 13, 1974		1.05
September 17, 1974 - Temporary 7% increase continued until 11-30-74		
December 1, 1974		1.06
January 1, 1975		1.07
February 24 meeting, Board adopted a new base to be effective January 1, 1975. New Base = 1.07 + 7% + Approx. 5%		
January		1.00
March		1.01
April		1.02
June 19, 1975		1.04
August 1, 1975		1.05
October 1, 1975		1.06
November 1, 1975		1.07
December 1, 1975		1.08
April 1, 1976		1.09
May 1, 1976		1.10
June 1, 1976		1.11
July 1, 1976		1.12
September 1, 1976		1.13
October 1, 1976		1.14
December 1, 1976		1.15
February 1, 1977		1.16

Table B-5

SMALL BUILDING AREA MULTIPLIERS

Building Area (sq ft)	Multiplier	Building Area (sq ft)	Multiplier
Under 800	1.15	6,400-7,199	1.07
800-1,599	1.14	7,200-7,999	1.06
1,600-2,399	1.13	8,000-8,799	1.05
2,400-3,199	1.12	8,800-9,599	1.04
3,200-3,999	1.11	9,600-10,399	1.03
4,000-4,799	1.10	10,400-11,199	1.02
4,800-5,599	1.09	11,200-11,999	1.01
5,600-6,399	1.08	12,000 or more	None

Table B-6

PRESENT VALUE OF $1 RECEIVED ANNUALLY

Periods to Be Paid	1%	2%	2½%	3%	4%	5%	6%	8%	10%	12%	14%	15%	16%	18%	20%	22%	24%	25%	26%	30%	40%	50%
1	0.990	0.980	0.976	0.971	0.962	0.952	0.943	0.926	0.909	0.893	0.877	0.870	0.862	0.847	0.833	0.820	0.806	0.800	0.794	0.769	0.714	0.667
2	1.970	1.942	1.927	1.914	1.886	1.859	1.833	1.783	1.736	1.690	1.647	1.626	1.605	1.566	1.528	1.492	1.457	1.440	1.424	1.361	1.224	1.111
3	2.941	2.884	2.856	2.829	2.775	2.723	2.673	2.577	2.487	2.402	2.322	2.283	2.246	2.174	2.106	2.042	1.981	1.952	1.923	1.816	1.589	1.407
4	3.902	3.808	3.762	3.717	3.630	3.546	3.465	3.312	3.170	3.037	2.914	2.855	2.798	2.690	2.589	2.494	2.404	2.362	2.320	2.166	1.849	1.605
5	4.853	4.713	4.646	4.580	4.452	4.330	4.212	3.993	3.791	3.605	3.433	3.352	3.274	3.127	2.991	2.864	2.745	2.689	2.635	2.436	2.035	1.737
6	5.795	5.601	5.508	5.417	5.242	5.076	4.917	4.623	4.355	4.111	3.889	3.784	3.685	3.498	3.326	3.167	3.020	2.951	2.885	2.643	2.168	1.824
7	6.728	6.472	6.349	6.230	6.002	5.786	5.582	5.206	4.868	4.564	4.288	4.160	4.039	3.812	3.605	3.416	3.242	3.161	3.083	2.802	2.263	1.883
8	7.652	7.325	7.170	7.020	6.733	6.463	6.210	5.747	5.335	4.968	4.639	4.487	4.344	4.078	3.837	3.619	3.421	3.329	3.241	2.925	2.331	1.922
9	8.566	8.162	7.971	7.786	7.435	7.108	6.802	6.247	5.759	5.328	4.946	4.772	4.607	4.303	4.031	3.786	3.566	3.463	3.366	3.019	2.379	1.948
10	9.471	8.983	8.752	8.530	8.111	7.722	7.360	6.710	6.145	5.650	5.216	5.019	4.833	4.494	4.192	3.923	3.682	3.571	3.465	3.092	2.414	1.965
11	10.368	9.787	9.514	9.253	8.760	8.306	7.887	7.139	6.495	5.938	5.453	5.234	5.029	4.656	4.327	4.035	3.776	3.656	3.544	3.147	2.438	1.977
12	11.255	10.575	10.258	9.954	9.385	8.863	8.384	7.536	6.814	6.194	5.660	5.421	5.197	4.793	4.439	4.127	3.851	3.725	3.606	3.190	2.456	1.985
13	12.134	11.348	10.983	10.635	9.986	9.394	8.853	7.904	7.103	6.424	5.842	5.583	5.342	4.910	4.533	4.203	3.912	3.780	3.656	3.223	2.468	1.990
14	13.004	12.106	11.691	11.296	10.563	9.899	9.295	8.244	7.367	6.628	6.002	5.724	5.468	5.008	4.611	4.265	3.962	3.824	3.695	3.249	2.478	1.993
15	13.865	12.849	12.381	11.938	11.118	10.380	9.712	8.559	7.606	6.811	6.142	5.847	5.576	5.092	4.676	4.315	4.001	3.859	3.726	3.268	2.484	1.995
16	14.718	13.578	13.055	12.561	11.652	10.838	10.106	8.851	7.824	6.974	6.265	5.954	5.668	5.162	4.730	4.357	4.033	3.887	3.751	3.283	2.488	1.997
17	15.562	14.292	13.712	13.166	12.166	11.274	10.477	9.122	8.022	7.120	6.373	6.047	5.749	5.222	4.775	4.391	4.059	3.910	3.771	3.295	2.492	1.998
18	16.398	14.992	14.353	13.754	12.659	11.690	10.828	9.372	8.201	7.250	6.467	6.128	5.818	5.273	4.812	4.419	4.080	3.928	3.786	3.304	2.494	1.999
19	17.226	15.678	14.979	14.324	13.134	12.085	11.158	9.604	8.365	7.366	6.550	6.198	5.878	5.316	4.844	4.442	4.097	3.942	3.799	3.311	2.496	1.999
20	18.046	16.351	15.589	14.877	13.590	12.462	11.470	9.818	8.514	7.469	6.623	6.259	5.929	5.353	4.870	4.460	4.110	3.954	3.808	3.316	2.497	1.999
21	18.857	17.011	16.185	15.415	14.029	12.821	11.764	10.017	8.649	7.562	6.687	6.312	5.973	5.384	4.891	4.476	4.121	3.963	3.816	3.320	2.498	2.000
22	19.660	17.658	16.765	15.937	14.451	13.163	12.042	10.201	8.772	7.645	6.743	6.359	6.011	5.410	4.909	4.488	4.130	3.970	3.822	3.323	2.498	2.000
23	20.456	18.292	17.332	16.444	14.857	13.489	12.303	10.371	8.883	7.718	6.792	6.399	6.044	5.432	4.924	4.499	4.137	3.976	3.827	3.325	2.499	2.000
24	21.243	18.914	17.885	16.936	15.247	13.799	12.550	10.529	8.985	7.784	6.835	6.434	6.073	5.451	4.937	4.507	4.143	3.981	3.831	3.327	2.499	2.000
25	22.023	19.523	18.424	17.413	15.622	14.094	12.783	10.675	9.077	7.843	6.873	6.464	6.097	5.467	4.948	4.514	4.147	3.985	3.834	3.329	2.499	2.000
26	22.795	20.121	18.951	17.877	15.983	14.375	13.003	10.810	9.161	7.896	6.906	6.491	6.118	5.480	4.956	4.520	4.151	3.988	3.837	3.330	2.500	2.000
27	23.560	20.707	19.464	18.327	16.330	14.643	13.211	10.935	9.237	7.943	6.935	6.514	6.136	5.492	4.964	4.524	4.154	3.990	3.839	3.331	2.500	2.000
28	24.316	21.281	19.965	18.764	16.663	14.898	13.406	11.051	9.307	7.984	6.961	6.534	6.152	5.502	4.970	4.528	4.157	3.992	3.840	3.331	2.500	2.000
29	25.066	21.844	20.454	19.188	16.984	15.141	13.591	11.158	9.370	8.022	6.983	6.551	6.166	5.510	4.975	4.531	4.159	3.994	3.841	3.332	2.500	2.000
30	25.808	22.396	20.930	19.600	17.292	15.372	13.765	11.258	9.427	8.055	7.003	6.566	6.177	5.517	4.979	4.534	4.160	3.995	3.842	3.332	2.500	2.000
40	32.835	27.355	25.103	23.115	19.793	17.159	15.046	11.925	9.779	8.244	7.105	6.642	6.234	5.548	4.997	4.544	4.166	3.999	3.846	3.333	2.500	2.000
50	39.196	31.424	28.362	25.730	21.482	18.256	15.762	12.233	9.915	8.304	7.133	6.660	6.246	5.554	4.999	4.545	4.167	4.000	3.846	3.333	2.500	2.000

SOURCE: Jerome Bracken and Charles J. Christenson, *Tables for Use in Analyzing Business Decisions* (Homewood, Ill.: Richard D. Irwin, Inc., 1965), except for the data on 2½%, the source for which is *Mathematical Tables from Handbook of Chemistry and Physics* (6th ed.; Cleveland: Chemical Rubber Publishing Co., 1938).

AUTHORS' NOTE: These values are obtained by compounding at the end of each period. Other tables use different schemes of compounding, without changing the magnitudes greatly.